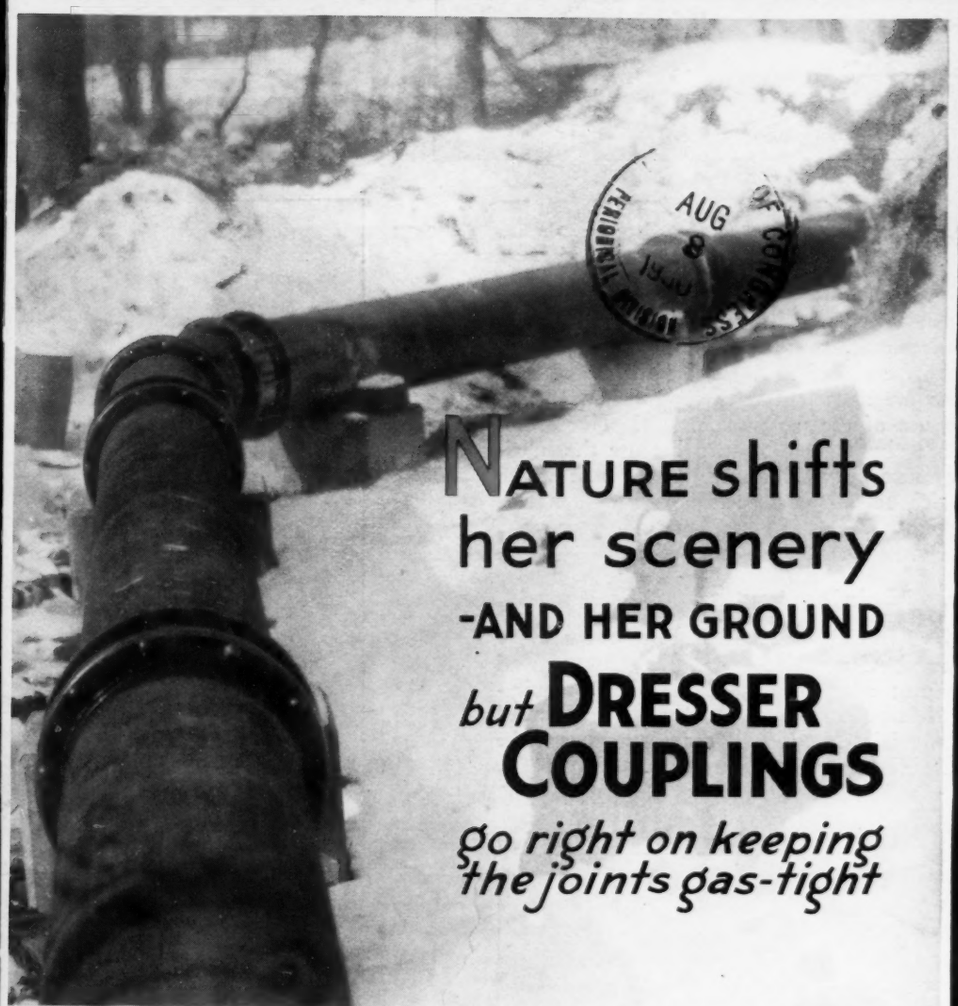
WESTERN GAS

August
1930

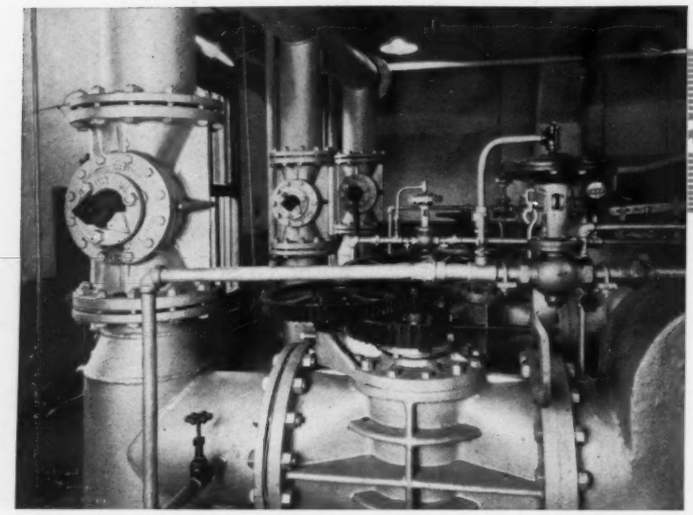
20 Cents
the Copy



DRESSER COUPLINGS
DOMINATE!

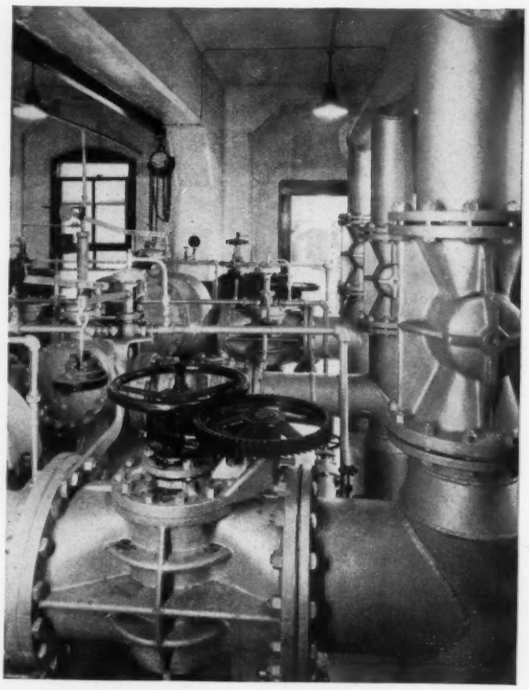
S. R. DRESSER MANUFACTURING CO., BRADFORD, PA.

A MONTHLY JOURNAL DEVOTED TO THE
WESTERN GAS & APPLIANCE INDUSTRIES



NEVER A LEAK

Lubricant Seals The Plug

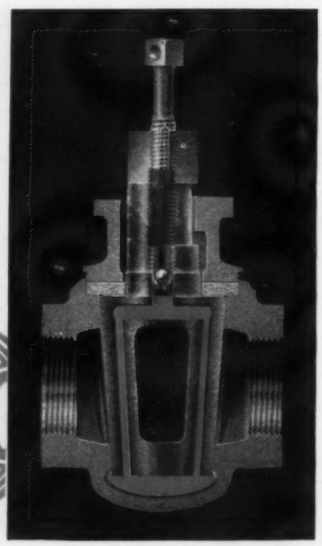


Nordstrom Valves are leak-resistant because lubricant under pressure forms a seal between the contact surfaces of the plug and its seat and renders the valve tight against leakage without abnormal pressure of the plug on its seat. Nordstrom Valves are always easy to turn because the lubricant exerts an upward pressure on the base of the plug which releases the plug instantly should it ever be tight. A turn of the lubricant screw seals, unseats and lubricates the valve.

"Merco" Lubricants and Pipe Compound

There is a special "Merco" Lubricant for every valve service. Our engineers will gladly recommend the lubricant adapted to your particular requirements. "Merco" Pipe Compound seals screw thread or gasketed joints. Will not corrode or freeze the joint. Readily applied with a brush.

Illustrations show Nordstrom lubricated Valves in service in the plant of Southern Gas and Power Company.



MERCO NORDSTROM VALVE COMPANY

SUBSIDIARY OF THE MERRILL COMPANY . . ENGINEERS

Atlanta - Healy Bldg.
Boston - 184 Boylston St.
Buffalo - Genesee Bldg.
Chicago - 176 W. Adams St.
Dallas - Magnolia Bldg.
Detroit - 2842 West Grand Blvd.
El Paso - 111 So. Virginia St.
Houston - Petroleum Bldg.
Los Angeles - 556 So. San Pedro St.
New Orleans - Masonic Temple Bldg.
New York - 11 W. 42nd St.
Pittsburgh - Clark Bldg.
St. Louis - 317 N. Eleventh St.
San Francisco - 343 Sansome St.

Agencies:

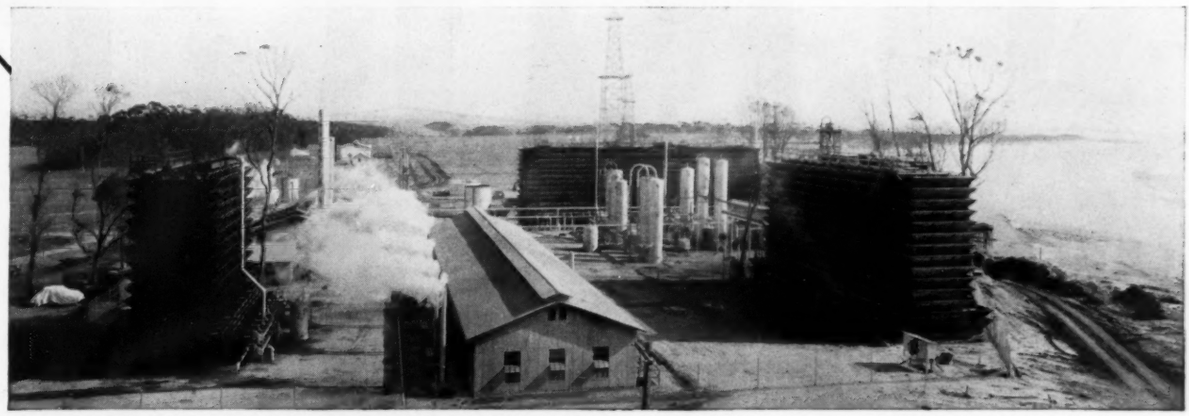
Denver - Republic Supply Company, 332 Continental Oil Bldg.
Honolulu - W. A. Ramsay Co., Ltd., Fort & Queen Streets
Manila - E. W. Sharp, c-o J. A. Murphy Co. Perez Semanillo Bldg.
Philadelphia - Brown, Wilson & Company, 1600 Arch St.
Saginaw - Arthur C. Beckert, 112 Durand St.
Salt Lake City - National Equipment Co., 101 West 2nd South St.
Tulsa - B.V. Emery & Company, 216 E. Brady Street

Factories in U. S. Oakland, Calif. and Belleville, N. J.
Canada - Peacock Bros., Ltd., Montreal, Toronto, Winnipeg, Vancouver. (Also Sydney, N.S.)
England - Audley Engineering Co., Ltd., Newport, Shropshire.
Buenos Aires, Argentine, - General Electric, Soc. Anon., Victoria 618 Esq. Peru.

Nordstrom Valves

Fluor Specialized Engineering

A COMPLETE SERVICE



ESTIMATES
DESIGNS
PLANS
INSTALLATION

—Each plant considered as a separate and distinct problem from start to finish.

—Each installation is designed to fit all the particular individual operating conditions involved.

—We specialize in Gas Compressor Stations, Gasoline Absorption Plants, Refinery Equipment, Boiler Plants, Cooling Systems, Pump Stations, General Concrete Work and Machinery Installation.

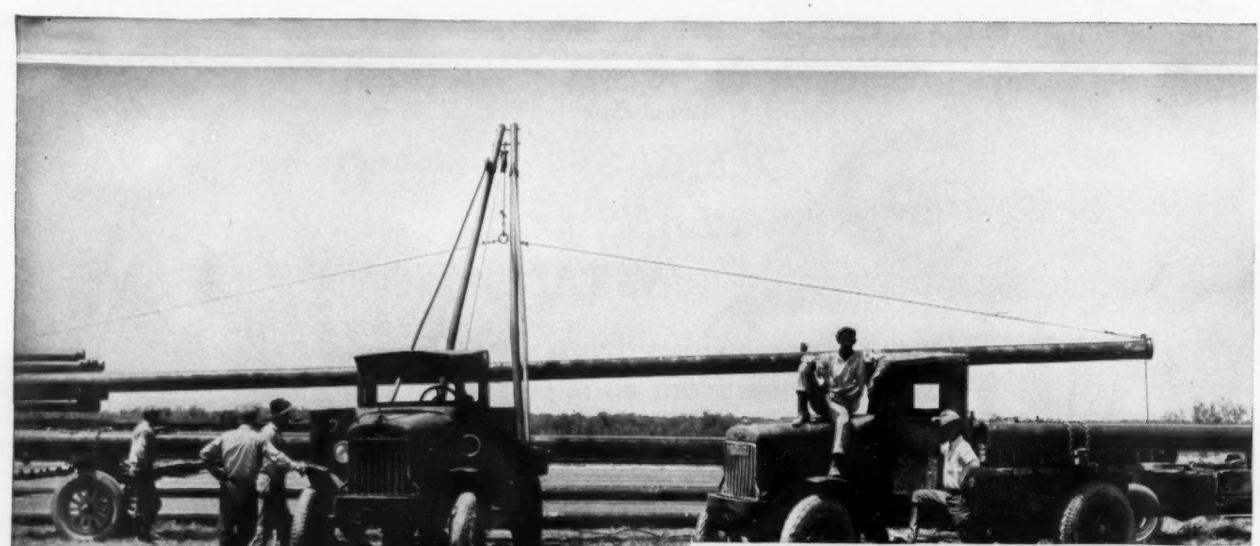
THE Fluor CORPORATION, LTD.

909 East 59th St., Los Angeles, California

Tulsa, Okla.	New York, N. Y.	Dallas, Texas	Kansas City, Mo.	Houston, Texas
McBirney Bldg.	30 Church St.	Magnolia Bldg.	503 Fairfax Bldg.	2nd National Bank Bldg.

August, 1930, Volume VI, Number 8, WESTERN GAS is published by Western Business Papers, Inc., at 124 West Fourth Street, Los Angeles, California. Subscription price (in advance) 20 cents the copy; 2.00 per year; 3 years $5.00; $3.00 per year foreign. Entered as second class matter June 1, 1925, at the postoffice at Los Angeles, under the Act of March 3, 1879.

30·40·



SMITH Welded Line Pipe is supplied in lengths of 30 feet, 40 feet, or 60 feet — every length uni-

SMITH WELDED

60 FOOT LENGTHS

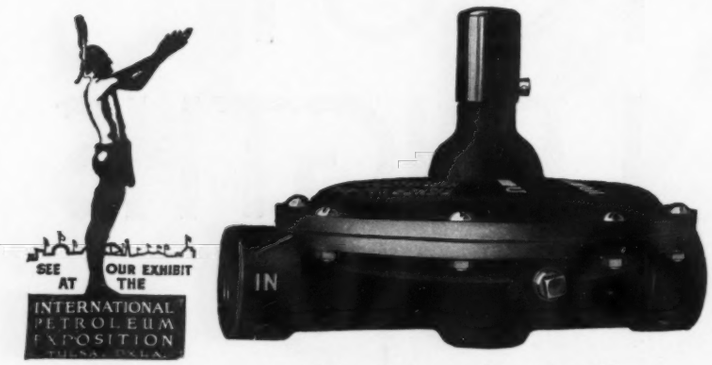
form and every length exactly matching the next.

A. O. SMITH CORPORATION
General Offices: Milwaukee, Wisconsin
OIL AND GAS FIELD PRODUCTS DIVISION
District Offices: New York Tulsa Houston Los Angeles

GAS LINE PIPE

• • *Positive* • •

House Service Regulation



Fisher Type 725 (Pats. Pend.)

FISHER now offers the Type No. 725 for reducing high initial gas pressures (1 lb. to 300 lbs.) to inches of water for house service duty.

New in design, yet thoroughly proved, manufactured for the past three years and many thousand now in service.

Incorporates entirely new and exclusive cantilever operating spring which eliminates all levers, lost motion, friction and bearing points.

Particularly designed for Butane and natural gas distribution, also suitable for artificial gas.

Before you specify house service regulators write for Circular No. 805. See for yourself the many advantages in the FISHER Type No. 725.

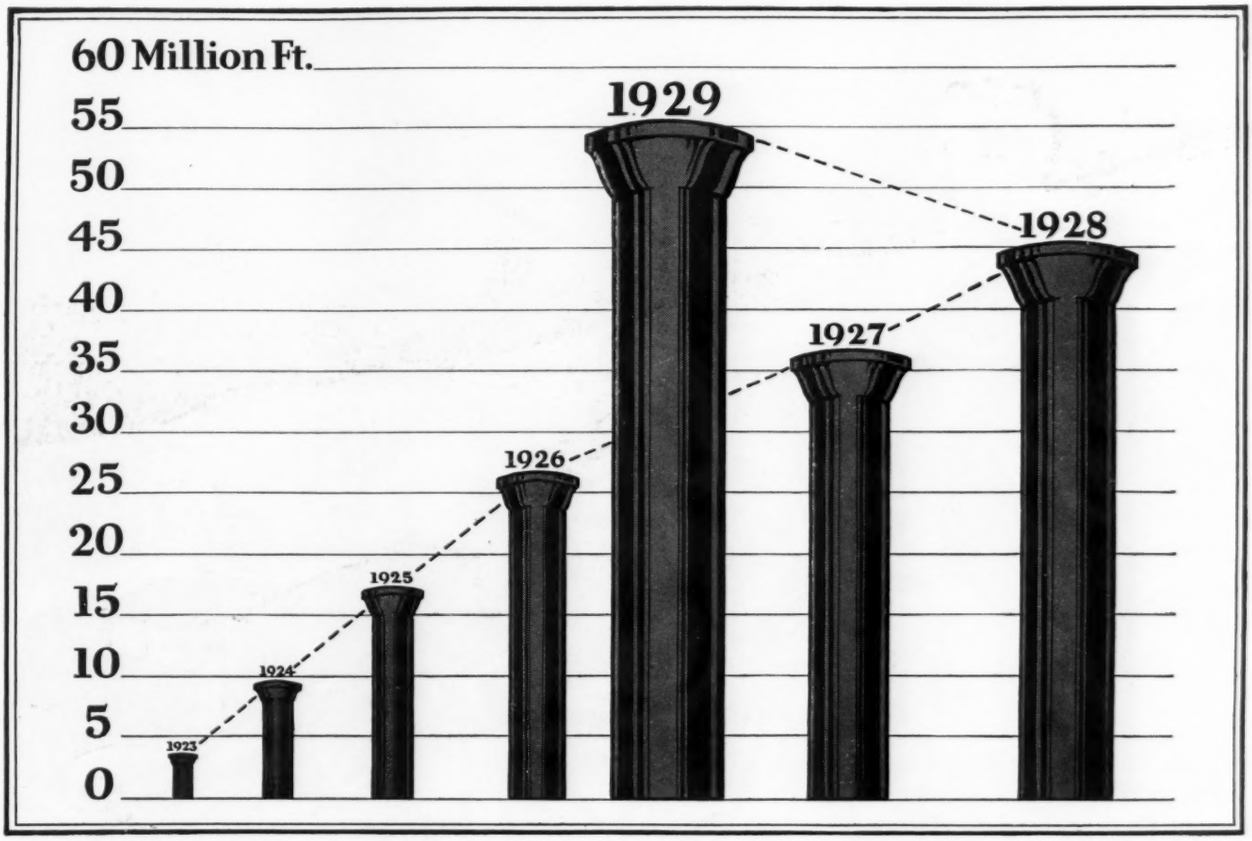
A Fisher Design in Every Line

Steam Pump Governors
[10 to 10,000 lbs.]
Boiler Feed Pumps
Fuel Oil Pumps
Vacuum Pumps
Receiver Tank Pumps
Pump By-Pass Valves
electric and power driven pumps
Reducing Valves, Pressure Regulators
for all pressures—liquids, gases, steam
Differential Pressure Regulators
Vacuum Regulators
Strainers
pipe, suction and drip pocket
Liquid Level Controllers
direct and remote type
Lever Valves
air, gas, or liquid
Float Valves
Fluid Mixers
Hydraulically Operated Valves
Relief Valves
Back Pressure Valves
Steam Traps—Air Traps—
Gasoline Traps—Grease Traps
Exhaust Heads
Steam and Oil Separators
Drip Pockets
Vapor Pressure Controllers
for oil storage tanks
Boiler Gas Fuel Governors
Gas Engine Fuel Regulators
Automatic Gas Relief Valves
Gas Pressure Regulators
main and house service
Liquefied Petroleum Gas Regulators
for gas cylinders
Gas Water Traps

Complete Catalogue On Request

FISHER

THE FISHER GOVERNOR COMPANY, Inc.
Marshalltown, Iowa
2400 Fisher Building



. . . *today*, more than 10,227 miles of U.S. deLavaud Pipe are in service

In December 1929, more than 54 million feet, or 10,227 miles of deLavaud Pipe — manufactured by the U. S. Pipe and Foundry Company — were in service throughout the country. A mighty fine record of acceptance for this sturdy seven-year-old product!

The first year of its manufacture in the United States, more than three million feet of deLavaud Pipe were put down. Since that time, its popularity has increased by leaps and bounds. The above chart tells the story.

Strength, flexibility and greater carrying capacity are the outstanding reasons for deLavaud Pipe's wide acceptance. DeLavaud Pipe is produced by pouring molten iron into a rapidly revolving metal mold. Centrifugal force holds the metal against the sides of the mold and drives out impurities with a force many times greater than gravity. The metal mold is encased in a water jacket, the cooling action of which brings about the remarkably fine granular structure of the iron.

Immediately after coming from the machine, every length of deLavaud Pipe is uniformly annealed in a specially constructed furnace where controlled heat eliminates all possibility of casting strains.

DeLavaud Pipe is manufactured in thicknesses and weights in strict accordance with the specifications of the American Water Works Association and the American Gas Association as well as the United States Government Specifications. The new deLavaud Handbook gives complete information. Write for your free copy today.

United States Pipe and Foundry Co., Burlington, N.J.

Sales Offices: New York, Philadelphia, Pittsburgh, Cleveland, Buffalo, Chicago, Dallas, Birmingham, Kansas City, Minneapolis, Seattle, San Francisco, Los Angeles

Our pipe bears the "Q-Check" trademark of The Cast Iron Pipe Research Association

There's a Place in the Reviewing Stand for You

Come where everything that's new and important in methods and machinery for the petroleum industry will be demonstrated for your instruction at one time and place. Attend the great international market of petroleum equipment and take a post-graduate course in YOUR branch of the industry. Five great buildings and many acres of open air space devoted to Scientific and Technical, Producing, Refining, Transporting and Marketing divisions.

Make reservations now. For any information address Wm. B. Way, Gen. Mgr., International Petroleum Exposition, Tulsa, Okla., U. S. A.

Specify

WALWORTH
VALVES
FITTINGS
AND TOOLS

IRON BODY 2000 LB. TEST
GATE VALVE

This line of Walworth valves is made in 700, 1000, 1600 and 2000 lb. test sizes.

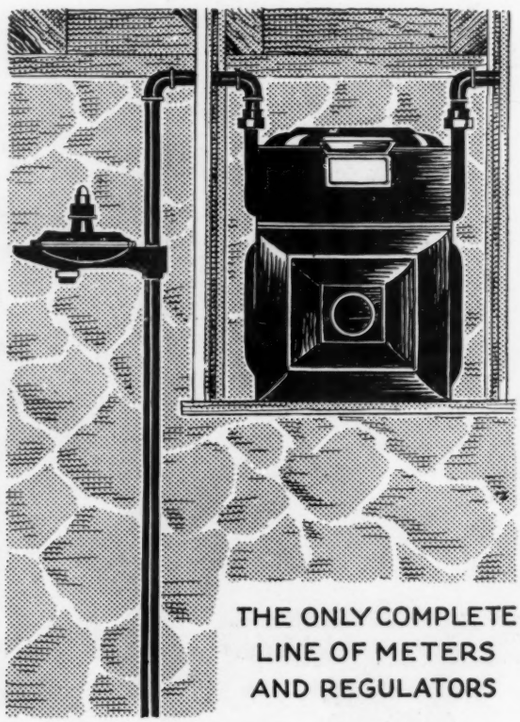
WALWORTH IRON BODY
DOUBLE DISC GATE VALVES

• The 700, 1000, and 1600 lb. Test Valves in this line are well known as standard equipment for heavy-duty spots around wells, in pump houses, and along the pipe line right-of-way. • To these we have added a new 2000 lb. Test Valve of similar construction . . . Steeliron, Double-Disc, Bronze Mounted and Bronze Stem . . . recommended for cold oil, water, and gas service at 1000 lbs. working pressure. • The other three valves are recommended for 400, 500, and 800 lbs. working pressure respectively.

for GAS

WALWORTH

. . . Distributors in Principal Cities of the World . . .
General Sales Offices: 60 E. 42nd St., New York
WALWORTH CALIFORNIA CO., 235 Second St., San Francisco
WALWORTH COMPANY, 809 Fourth Place, Los Angeles

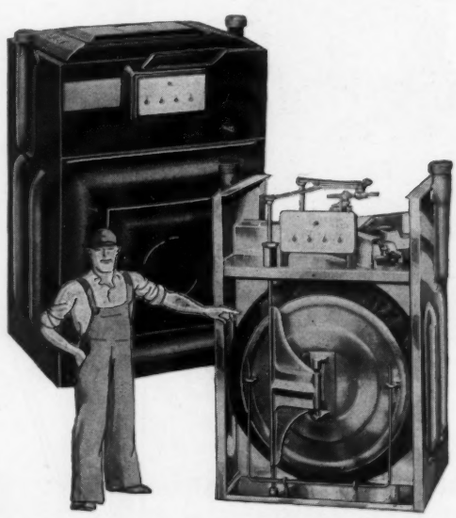


DOMESTIC INSTALLATIONS EMCO TIN METER

THE ONLY COMPLETE LINE OF METERS AND REGULATORS

A truly EMCO product in design, construction and accuracy. A tangent permitting easy and accurate adjustments, that has proven successful for many years in our iron meters. The rock shaft is rigid, long wearing and easily serviced. Index, the best obtainable, held rigidly in place by unique arrangement of supports.

Inlet parts are above the gallery table in both type meters. All ports of EMCO A and B type meters are exactly interchangeable with each other, except the valve, valve seat and crank. Each meter must pass three tests to prove its accuracy before being passed by our inspectors.



EMCO PRINCIPLES

Raw Materials Laboratory Tested
Interchangeability of Parts
Rigid Inspection

EMCO METERS AND REGULATORS

PITTSBURGH EQUITABLE METER COMPANY

Main Office and Works—Pittsburgh, Pa.

New York City, Chicago, Ill., Los Angeles, Calif., Tulsa, Okla., Dallas, Texas, Columbia, S. C., Salt Lake City, Kansas City, Mo., Seattle, Wash., Houston, Texas

Four Worthington 1250 hp. 24" x 36" gas-engine-driven gas compressors at Reform Station.

Exterior of the Reform, Alabama, Compressor Station on the natural gas pipe line extending from the Monroe and Richland Fields, in Louisiana, to Atlanta, Georgia.

Gas for Birmingham and Atlanta *. . . pumped from Louisiana Fields by* Worthington gas-engine-driven compressors

IT would be difficult to over-estimate the importance to the States of Mississippi, Alabama and Georgia of the Southern Natural Gas Corporation's newly-opened line from the Louisiana Fields . . . the longest natural gas pipe line in the world.

And in keeping with its importance is the imposing array of engineering talent which contributed to its development and the thoroughgoing methods employed in its construction.

The compressor station at Reform, Alabama, is Worthington-equipped with four 1250 hp. 24" x 36" twin-tandem gas-engine-driven compressors. This equipment was installed by *A. M. Lockett & Company* under contract from *Ford, Bacon & Davis,* supervisory engineers for the original line. An additional unit has just been ordered for this station.

The new station at Pickens, Mississippi, will be equipped with five Worthington 1250 hp. units of the same type as those at Reform. These will be installed by *A. M. Lockett & Company,* under the supervision of *P. McDonald Biddison,* Consulting Engineer for the Southern Natural Gas Corporation.

More than 50% of the gas-engine-driven gas compressors now in service are Worthingtons. For information, communicate with the nearest Worthington district office.

PUMPS
COMPRESSORS
Stationary and Portable
CONDENSERS
and Auxiliaries
DIESEL ENGINES
GAS ENGINES
FEEDWATER HEATERS
WATER, OIL and GASOLINE METERS
MULTI-V-DRIVES
CHROMIUM PLATING
Literature on request

WORTHINGTON

EGR-9

WORTHINGTON PUMP AND MACHINERY CORPORATION

Works: Harrison, N. J. Cincinnati, Ohio Buffalo, N.Y. Holyoke, Mass.

Executive Offices: 2 Park Avenue, New York, N.Y.

GENERAL OFFICES: HARRISON, N. J.

District Sales Offices and Representatives:

ATLANTA	CHICAGO	DALLAS	EL PASO	LOS ANGELES	PHILADELPHIA	ST. PAUL	SEATTLE
BOSTON	CINCINNATI	DENVER	HOUSTON	NEW ORLEANS	PITTSBURGH	SALT LAKE CITY	TULSA
BUFFALO	CLEVELAND	DETROIT	KANSAS CITY	NEW YORK	ST. LOUIS	SAN FRANCISCO	WASHINGTON

Branch Offices or Representatives in Principal Cities of all Foreign Countries

A 50% SAVING in JOINTS

—with NATIONAL DOUBLE LENGTH PIPE

HERE IS another NATIONAL advantage that means a real worth while saving to gas companies—the use of NATIONAL Double Length Pipe for distributing mains. Double length pipe cuts the number of joints to about one-half . . . reduces leakage and means a considerable saving in time, labor and joint-making materials.

The increasing demand for NATIONAL Double Length Pipe by gas companies throughout the country shows a definite trend towards this feature of economy in pipe line construction. This "double length" advantage is, of course, backed by the usual NATIONAL qualities. The steel is of good welding quality and being uniform in chemical and physical properties, enables the welding crew to make uniformly strong joints. The steel has also a high degree of ductility—a characteristic that makes long lines flexible and easy to lay.

Remember, NATIONAL is the only lap-welded pipe made in double lengths—another reason why it is

America's Standard Wrought Pipe

NATIONAL TUBE COMPANY · Pittsburgh, Pa.
Subsidiary of United States Steel Corporation

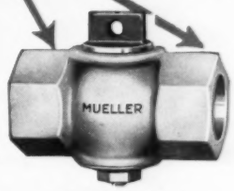
NATIONAL PIPE

3/4 of an inch for greater STRENGTH

HERE'S something you can't afford to overlook! These Mueller iron body stops have "recess" ends that extend nearly three-quarters of an inch beyond the threads. You can easily see how much more protection this provides the threads—how much additional strength at this vital spot.

You'll find all characteristic Mueller features in these stops—iron body and red brass key—inlet and outlet threaded at same time, permitting straight line connections "hot process" galvanizing for underground protection. Made in sizes ¾" to 2" inclusive.

MUELLER CO. (Established 1857); San Francisco, 1072 Howard St.; Los Angeles, 2468 Hunter St.; Dallas, 901 McKinney Ave.; Atlanta, 376 Nelson St., S. W. *Factory*: Decatur, Illinois; *Canadian Factory*: MUELLER, Limited, Sarnia.

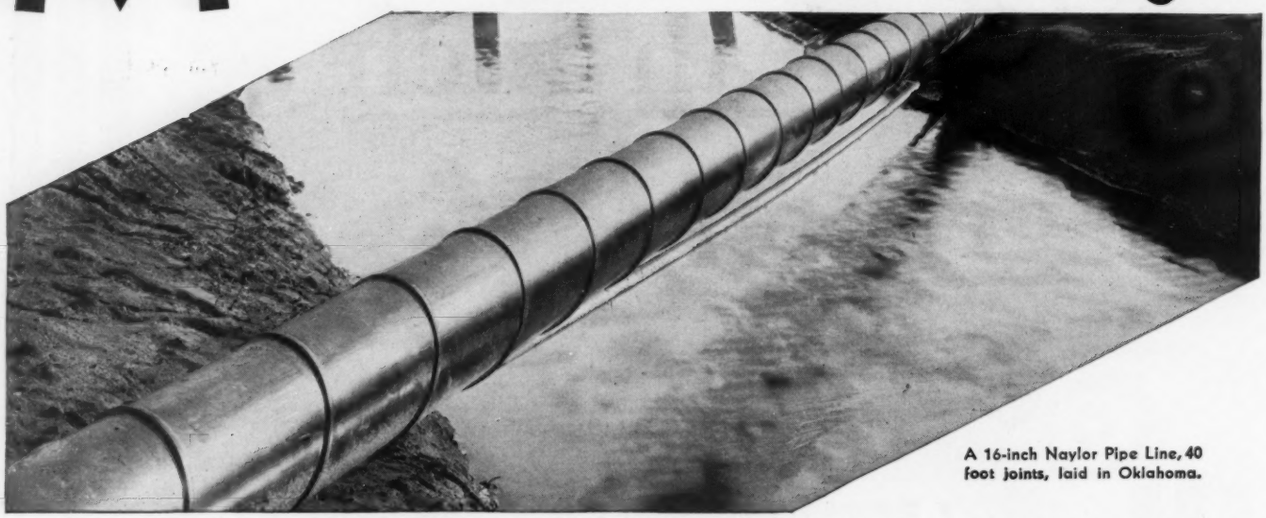


MUELLER
G-11094 Recess End Gas Stop

Mueller gas stops are made in sizes and styles to suit every requirement. Your request will bring complete information or we will gladly make recommendations for specific installation problems.

MUELLER

Maximum Structural Strength



A 16-inch Naylor Pipe Line, 40 foot joints, laid in Oklahoma.

Why It Is Inherent In Naylor Pipe

MAXIMUM structural strength is assured in Naylor Pipe by *distinctive* engineering features never before used in any pipe.

Bulky wall thicknesses are not relied upon to give Naylor Pipe its strength. On the contrary...the *electrically welded* spiral lock-seam truss provides a mechanically correct structure that stands the stress of the loads carried.

Not only that...but the spiral lock-seam truss structure of Naylor Pipe provides this great strength at 50% reduction in weight, as compared with standard weight wrought pipe.

Moreover, Naylor Pipe structure provides for expansion and contraction within the pipe itself. The welded spiral lock-seam truss acts as a continuous expansion joint, relieving the stresses and strains that would ordinarily be set up by changes in temperature.

Ask our nearest Sales Office---or write direct to us---for more complete information and data. But in the meantime, remember....

Only Naylor Pipe has the Naylor Structure

NAYLOR PIPE COMPANY, Main Office & Plant, 1230 E. 92nd St., CHICAGO

SALES OFFICES

3116 Chrysler Bldg. New York ◆ Witherspoon Bldg. Philadelphia ◆ 507 Philtower Bldg. Tulsa ◆ 2301 Commerce St. Houston ◆ 402 Petroleum Bldg. Ft. Worth

MONTREAL, CANADA: Mechanical Equipment Company, 660 St. Catherine St., West

Standardized Naylor Pipe is made in sizes 6" to 12" I. D. and 14" to 20" O. D. in any uniform length desired up to 40'0". Ends made to wrought pipe standards for all types of coupling.

TONCAN COPPER

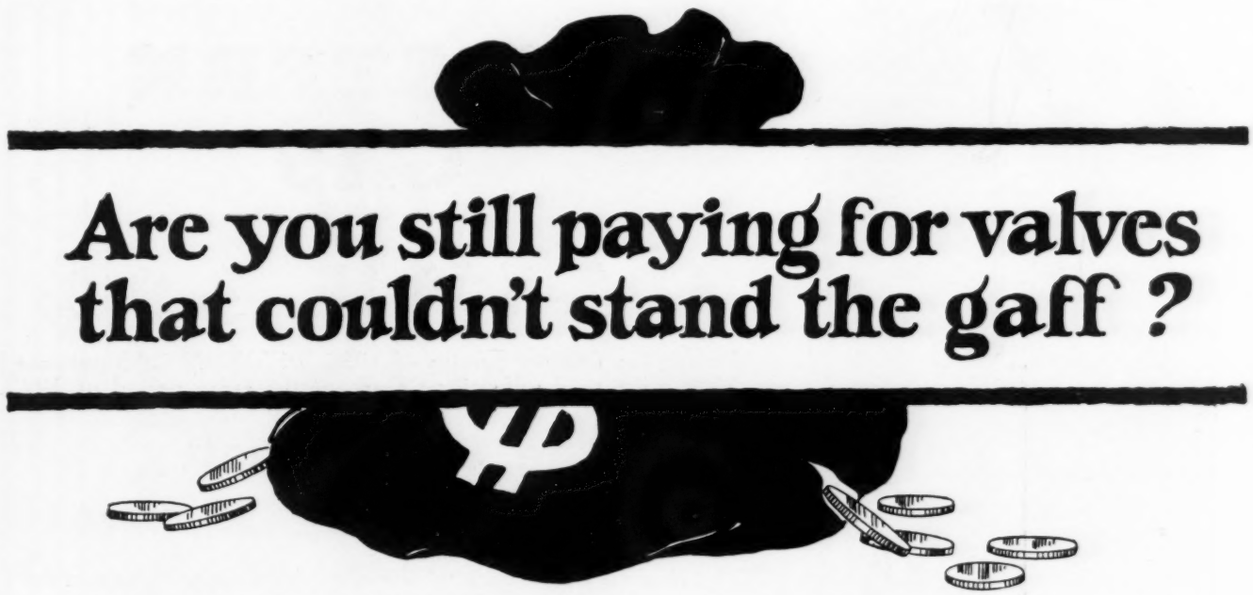
Naylor Pipe

Maximum Structural Strength Mo-lyb-den-um With Minimum Weight

IRON

Toncan Copper Molybdenum Iron possesses a superior corrosion resistance making it the favored pipe material.

Where corrosion is not a problem, Naylor Pipe can be furnished in steel.



Are you still paying for valves that couldn't stand the gaff ?

With production costs what they are today, even the largest operators can ill-afford a valve whose qualities have not been proven in the field.

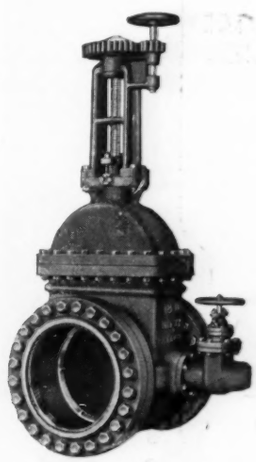
Darling Gate Valves cover all the points required for a perfect valve, regardless of the severity of service. They open and close readily. They last for years—and seldom need repairing or replacing. Repairs, if any, can be made on the spot.

Why? Self-aligning, self-cleaning discs. No pockets or ribs to collect sand and scale. Simple and compact—will not jam or disassemble.

"How" and "Why" Darlings have this reputation is shown in a catalog we will gladly mail you on request.

DARLING VALVE & MFG. COMPANY
Williamsport, Penna.

New York Oklahoma City Houston



DARLING
GATE VALVES

"Industrial Advertising first 6 months of 1930 shows a 2% loss from 1929."—*Class & Industrial Marketing.*

WESTERN GAS

GAINS 39%

During the first six months of 1930 WESTERN GAS published 39% more paid advertising than for the same period of 1929.

The Gas Industry Is Today's Big Market

Roger W. Babson says: "One of the fastest growing industries in the country is the natural gas industry."

While other basic industries are marking time, the gas industry is rapidly forging ahead. Millions of dollars are being spent in the construction of huge gas transmission lines to bring this remarkable fuel to population centers. Aggressive merchandising campaigns by utilities involving millions of dollars in sales of gas burning equipment are being launched. **This is particularly true in the West.** In this section, west of the Mississippi River, WESTERN GAS has more paid circulation than all of the other three gas publications combined.

Manufacturers Show Preference to WESTERN GAS

WESTERN GAS	**increased**	**39%**
Another Gas Publication	increased	8%
Another Gas Publication	decreased	7%
Another Gas Publication	decreased	8%

The above percentages represent the gain and loss of advertising space carried by gas industry publications for the first six months of 1930 compared with 1929.

(Note: In comparing 1929 space with 1928 for the same period WESTERN GAS gained 34%—indicating a steady growth and a growing demand for this publication).

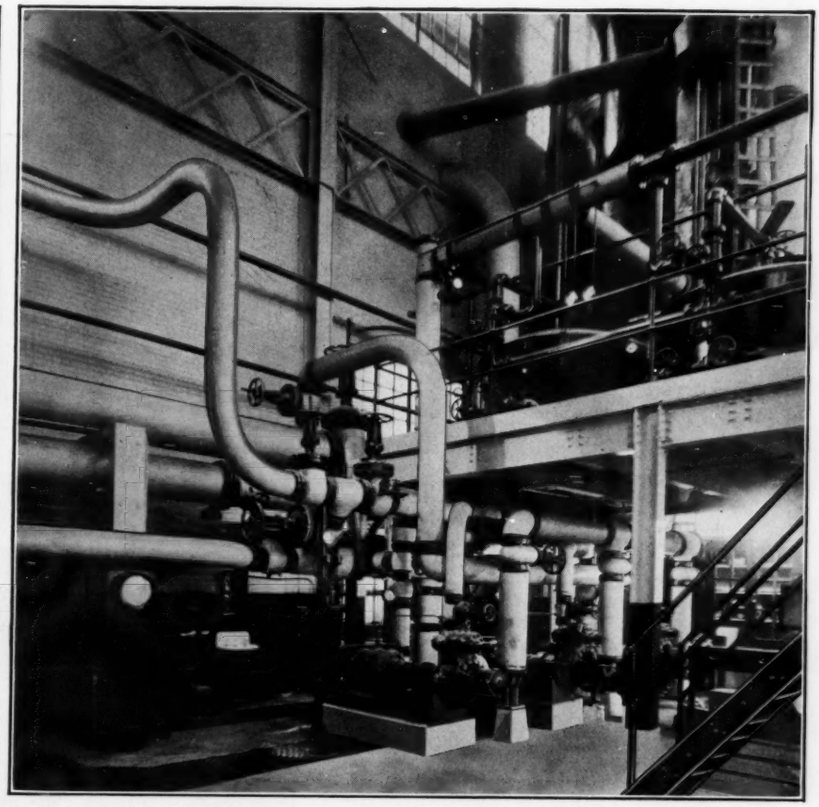
The Big Developments Are in the West

Manufacturers realize now, more than ever, the need of adequate advertising coverage in this section (the 22 western states) of the industry, which is now in its most extensive period of development. They also know that WESTERN GAS is the one medium to use to accomplish this.

Don't handicap your western salesmen. Give them an even break with competitors. Your advertising and sales helps in this western territory will assist them to increase your sales.

WESTERN GAS

124 West Fourth Street—Los Angeles **Branch Offices, San Francisco and Dallas**



ATWOOD

Piping for Field and Refinery

SINCE its first welded piping installation in 1908 (still in operation), the ATWOOD pipe Fabrication Department has ever been on the alert to meet more fully the fundamental requirements of Oil and Gas piping systems, in Field and Refinery. These requirements are reliability, accessibility, reduction of deterioration to a minimum, and incorporation of the most advanced engineering knowledge to maintain the highest operating efficiency for the service intended.

All these requirements are met to the highest degree in the installation partially illustrated above, one of the newest and largest blast furnace and coke plants in the country.

Many of our customers rely entirely upon ATWOOD Service not only for the fabrication of a piping system, but also for its design and installation. Why not profit by their experience? "He gains wisdom in a happy way who gains it by another's experience."

PITTSBURGH VALVE, FOUNDRY & CONSTRUCTION CO.
PITTSBURGH ~ PENNA.

DISTRICT OFFICES

New York City.....30 Church Street
Chicago, Ill. .....80 East Jackson Blvd.
Boston, Mass. .....185 Devonshire Street
Cleveland, Ohio.....858 Rockefeller Bldg.

REPRESENTATIVES

Los Angeles, Cal.....John G. Bell Co., 712 East Sixth Street
Seattle, Wash. .....Robinson Sales Co., 617 Fourth Ave.
Portland, Ore. .....Robinson Sales Co., 53 Fourth St.
Houston, Texas.....Maintenance Eng. Corp., 1400 Conti Street
Fort Worth, Texas.....Maintenance Eng. Corp., 500 E. 9th St.
Detroit, Mich. .....C. T. Richardson, General Motors Bldg.
Philadelphia, Penna.....R. J. Crozier Co., 10 South 18th Street

VALVES · WELDED PIPING · FITTINGS

CHROMIUM PLATED APPARATUS

for the

GAS INDUSTRY

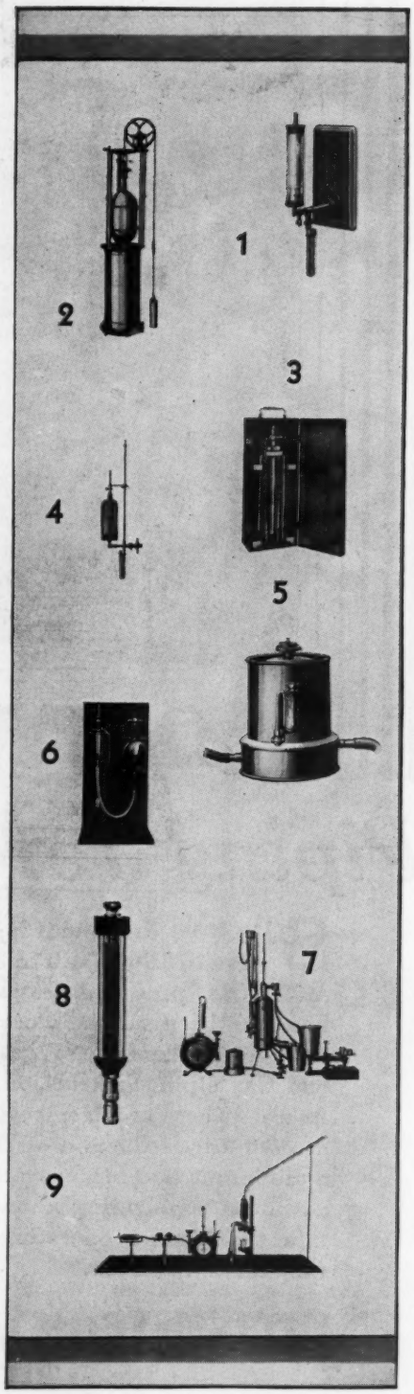
Chromium has proved its superiority over all types of plating that tarnish, stain, rust, corrode, wear or lose their lustre. Chromium plated equipment is now available to all users of gas apparatus.

Our protective plating is more than just a plate of chromium applied directly to the base metal. It is a triple plate first of copper, then nickel and lastly chromium. This produces a beautiful blue-white platinum-like color, the lustre of which is retained indefinitely.

Inert to sulphur and sulphur compounds, unaffected by atmospheric corrosion, chromium is the ideal plate and provides characteristics long desired by the consumer. Having longer wearing quality, and equal brilliance, chromium takes the place of nickel, silver, or platinum as a finish. No abrasives or polishing are required: simply wiping the surface with a damp cloth is all that is necessary to keep chromium plate bright.

Gas apparatus which may now be obtained in chromium plate is as follows:

1. Chimney Type Hydrogen Sulphide Test
2. Cubic Foot Bottle (Immersion Type)
3. Specific Gravity Apparatus
4. Young's Sulphur and Ammonia Test
5. Calorimeter Wet Governor
6. 1/10 Cubic Foot Bottle
7. American Calorimeter
8. Siphon Gauge
9. Referee's Sulphur and Ammonia Test



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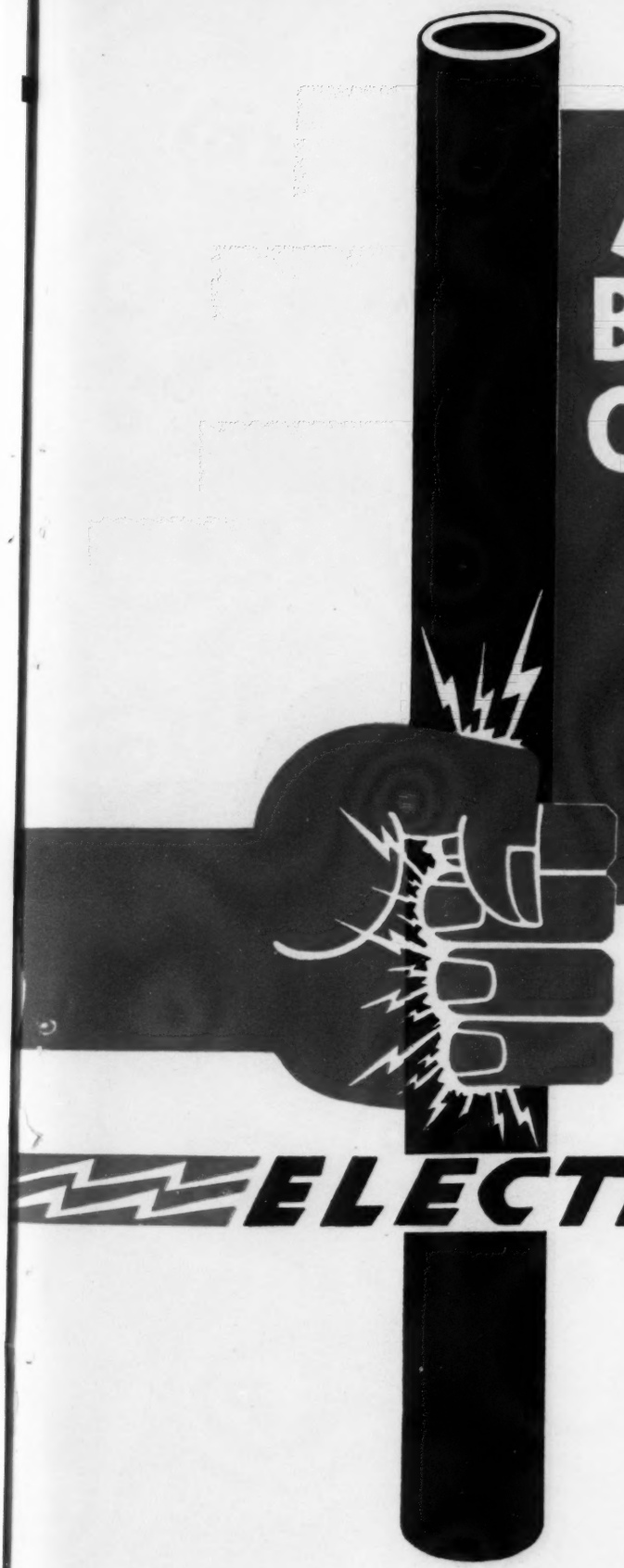

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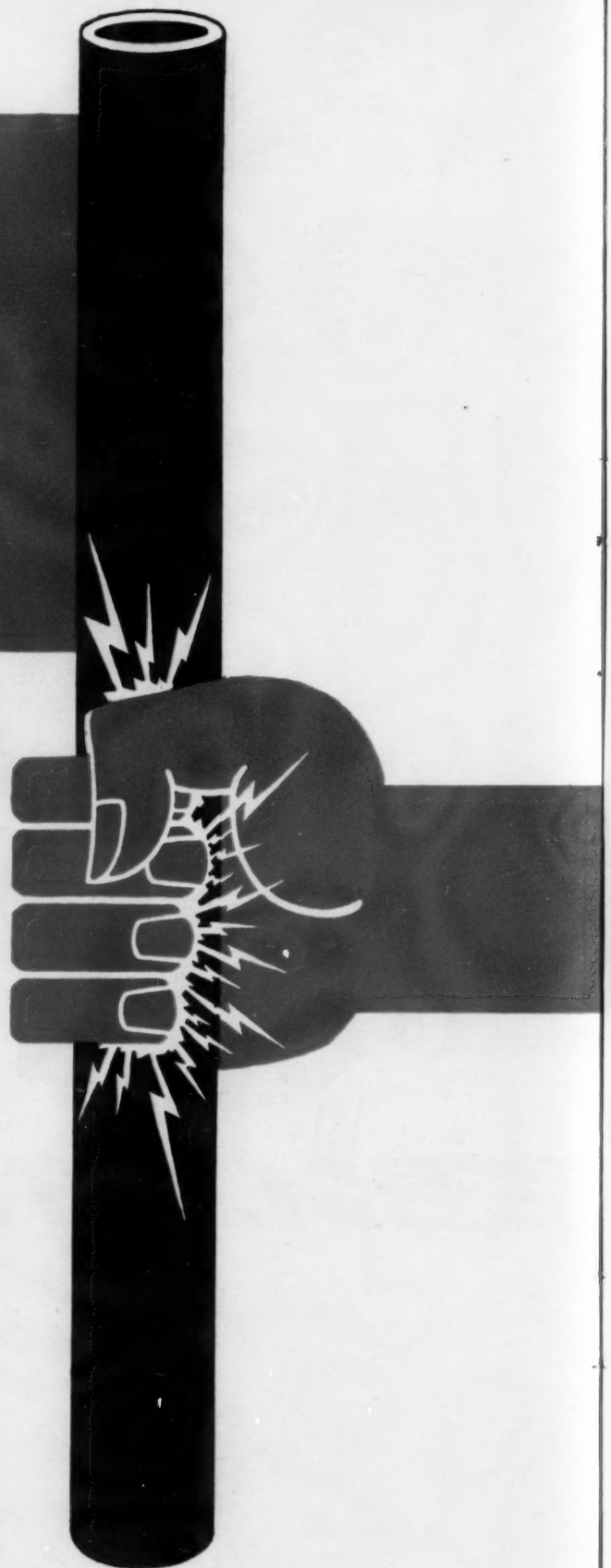

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JAY JENKINS, *Publisher* — GEORGE H. FINLEY, *Managing Editor* — ELLIOTT TAYLOR, *San Francisco Manager* — CRAIG ESPY, *Mid-Continent Manager*

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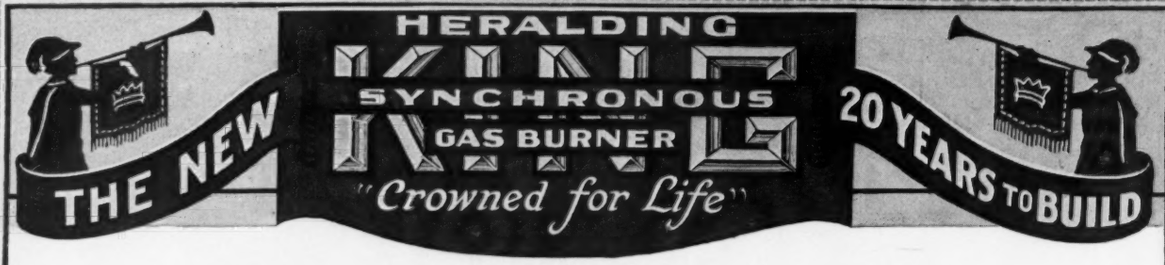
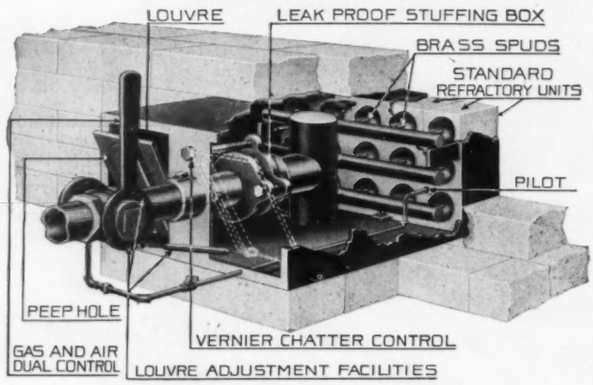


Write for Information and Liberal Dealer Franchise



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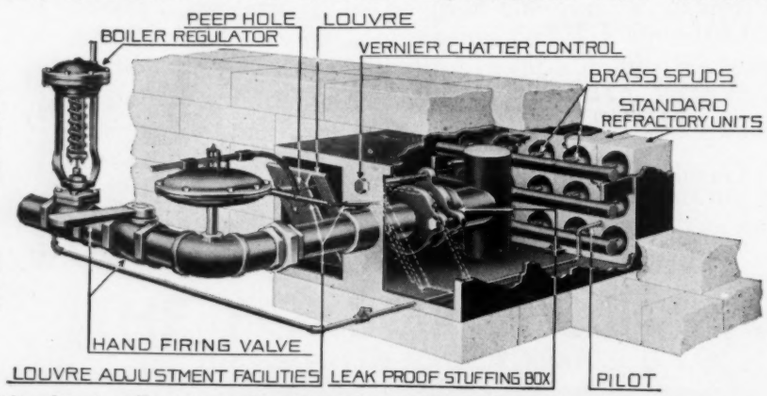

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SAN FRANCISCO **LOS ANGELES** **DALLAS**

Preparing *a* 101,000-Meter District *for* Natural Gas Service

By ELLIOTT TAYLOR

San Francisco Manager
WESTERN GAS

SINCE the Pacific Gas and Electric Company began the stupendous task of changing over its system to natural gas service, the appliance adjustment crews, numbering 1,000 men at the peak, have covered 54 towns in northern and central California. Twenty-five additional towns have received gas for the first time. Of the company's 479,912 gas meters, 440,133 had been changed over to natural gas on July 18.

Mr. Taylor's description of change-over procedure in metropolitan San Francisco also applies in large part to methods followed throughout the rest of the P. G. and E. territory.—*Editor.*

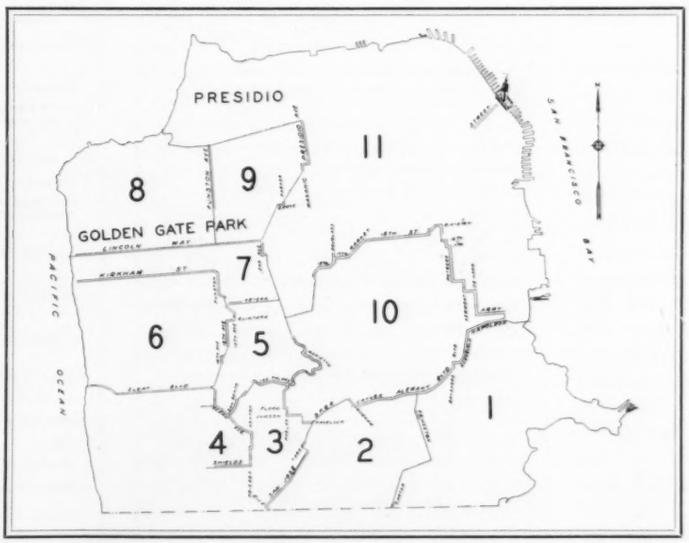
ON THE night of June 19 the Pacific Gas and Electric Company officially completed the change-over from manufactured to natural gas of its final and biggest district of the San Francisco Bay region. It is believed that the 101,000 meters comprising the metropolitan district of San Francisco represent the largest group of gas consumers to be changed at one time in the history of the natural gas industry. Nine hundred adjusters, with 66 captains and 15 supervisors, worked straight through from May 30 until the final date to complete the change-over.

The metropolitan area of San Francisco, being comprised of the consumers of what was at one time several smaller gas companies, is a maze of gas mains which could not be segregated and divided into smaller sections. For this reason the company waited until all of the other sections of both San Francisco and Oakland had been completed, in blocks of from 5,000 to 10,000 consumers.

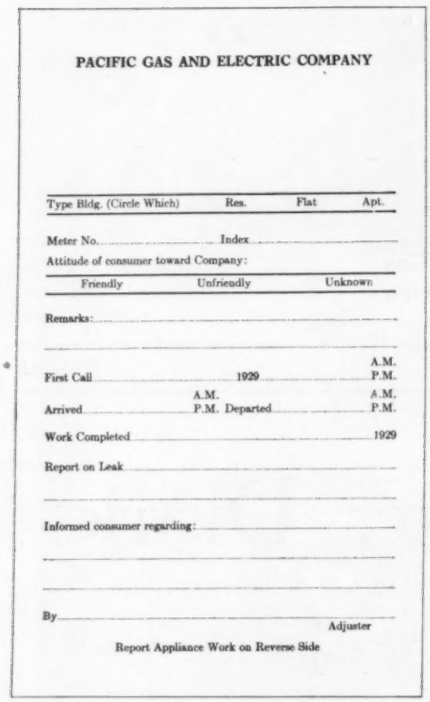
The procedure for the change-over was originated by Harry C. Ross, manager of the Fresno Division of this company, who was selected to direct change-over operations. E. T. Floyd, superintendent of gas distribution of the San Francisco Division and his assistant, E. G. Campbell, had direct supervision of the change-over work.

The so-called "District No. 11," comprising the bulk of down-town San Francisco, included, in addition to the thousands of apartment houses and homes, a large number of industrial installations. It is a matter of record that the industrial change-overs were completed without a single major complaint or difficulty. While there were many minor complaints from domestic consumers, there were none that could not be speedily adjusted, and the entire undertaking was accomplished without a single serious accident.

District No. 11, with its 101,000 meters, was divided into 18 sections. A complete pre-survey had been made of all industrial installations and every item of change-over equipment that would be required was on the job when the workmen arrived. The crews, in such instances as hotels, factories, etc., worked straight through day and night on a job until it was completed. The long-



District No. 11 on the map above includes the greater part of "down town" San Francisco. It was handled as a unit in the Pacific Gas and Electric Company's change-over operations.



PACIFIC GAS AND ELECTRIC COMPANY

Type Bldg. (Circle Which) Res. Flat Apt.

Meter No. Index

Attitude of consumer toward Company:

Friendly Unfriendly Unknown

Remarks:

First Call 1929 A.M. P.M.

Arrived A.M. P.M. Departed A.M. P.M.

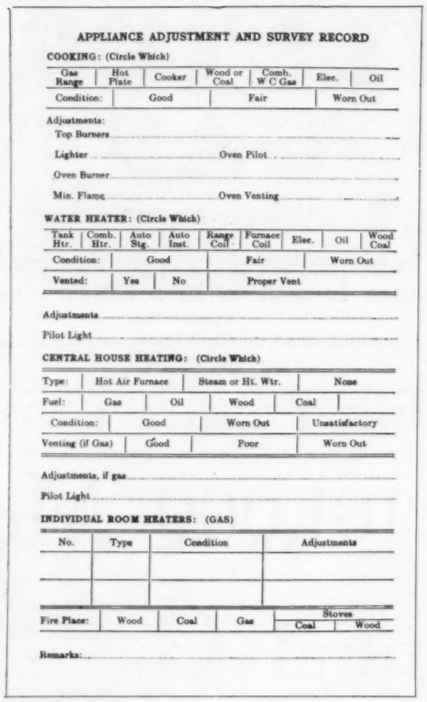
Work Completed 1929

Report on Leak

Informed consumer regarding:

By Adjuster

Report Appliance Work on Reverse Side



APPLIANCE ADJUSTMENT AND SURVEY RECORD

COOKING: (Circle Which)

Gas Range	Hot Plate	Cooker	Wood or Coal	Comb. W C Gas	Elec.	Oil

Condition: Good Fair Worn Out

Adjustments:

Top Burners

Lighter Oven Pilot

Oven Burner

Min. Flame Oven Venting

WATER HEATER: (Circle Which)

Tank Htr.	Comb. Htr.	Auto Stg.	Auto Inst.	Range Coil	Furnace Coil	Elec.	Oil	Wood Coal

Condition: Good Fair Worn Out

Vented: Yes No Proper Vent

Adjustments

Pilot Light

CENTRAL HOUSE HEATING: (Circle Which)

Type: Hot Air Furnace Steam or Ht. Wtr. None

Fuel: Gas Oil Wood Coal

Condition: Good Worn Out Unsatisfactory

Venting (if Gas) Good Poor Worn Out

Adjustments, if gas

Pilot Light

INDIVIDUAL ROOM HEATERS: (GAS)

No.	Type	Condition	Adjustments

Fire Place: Wood Coal Gas Stoves: Coal Wood

Remarks:

Inspection tag used by Pacific Gas and Electric Company adjusters for domestic change-over work. Front side of form is shown at left. Reverse side, at right, calls for detailed data on each consumer's gas equipment and adjustments made.

est time card on any one job showed 31 telephoned in to request the service.

To the 18 districts were assigned, in proportion to the number of meters, crews of from 20 to 100 men. The crews for each given district reported to the captain in charge at a meeting point in the territory being served. Upon the captains fell the responsibility of distributing the work tags and keeping the workmen supplied with all the necessary orifices and other fiittings. Four central repair stations were set up where minor repairs and changes that could not be handled on the job were completed.

By means of newspaper advertisements and an individual letter to every consumer, the householders were advised that natural gas had been turned on and were given instructions as to the use of their appliances prior to the arrival of the gas company adjusters.

There was something of the spectacular to arouse the interest of the citizens in the various neighborhoods on the night natural gas was turned into the mains. As natural gas was turned into the lines, it was necessary to bleed them of the previous gas so that adjusters would have natural gas in the appliances the first morning of their service calls. Bleeder pipes were tapped into the mains in various parts of the city and the gas to be exhausted was burned in an open flare. Flames 10 feet high roared from open pipes and lighted many blocks, dramatic evidence that the new fuel had at last arrived.

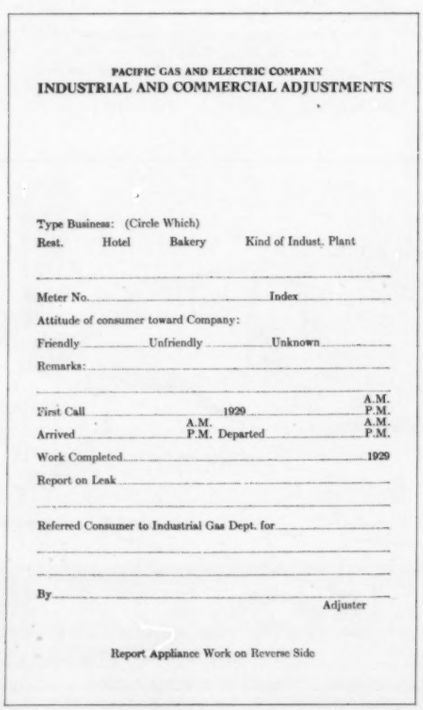
The adjusters who were secured for this temporary employment were given adequate shop training, the average per man being three weeks, after which they were sent out on their first few jobs with experienced adjusters until they were capable of handling domestic installations alone.

Each adjuster carried a tool box in which were contained the tools and equipment listed in Table No. 1.

TABLE NO. 1

TOOLS AND EQUIPMENT FOR P. G. AND E. HOUSE-TO-HOUSE ADJUSTMENT SERVICE

Tool bag.
Ring Book.
10-in. Pipe wrench.
8-in. Pipe wrench.
6-in. (Crescent) wrench.
4-in. (Crescent) wrench.
2-oz. ball-pein hammer.
Wire brush.
2 Swab brushes (5/8-in. diam. x 3½ in. long with wire handle).
Extra gas range burner cock.
Ford Valve (for peining cap orifice). Old valve from garage.
Orifice socket wrench.
¾-in. Wooden plug.
¾-in. Cap and plug.
½-in. Cap and plug.
⅛-in. plug.
¼-in. No. 28 tap.
No. 0 tap wrench.
Pin vise with No. 52, No. 68 and No. 72 "Morse" twist drills.
8-oz. ball pein hammer.
Pair thin nose pliers.
1½-in. Screw driver.
2½-in. Screw driver.
Small orifice reamer.
Medium orifice reamer.
Orifice reamer handle.
Large orifice reamer.
Three-cornered file.
Flashlight.
Hollow punch—½ in. diameter.
Orifice anvil block.
Orifice expander punch.
Metal block (small size).
Shoot-a-lite lighter.



PACIFIC GAS AND ELECTRIC COMPANY
INDUSTRIAL AND COMMERCIAL ADJUSTMENTS

Type Business: (Circle Which)
Rest. Hotel Bakery Kind of Indust. Plant

Meter No. Index

Attitude of consumer toward Company:

Friendly Unfriendly Unknown

Remarks:

First Call 1929 A.M. P.M.

Arrived A.M. P.M. Departed A.M. P.M.

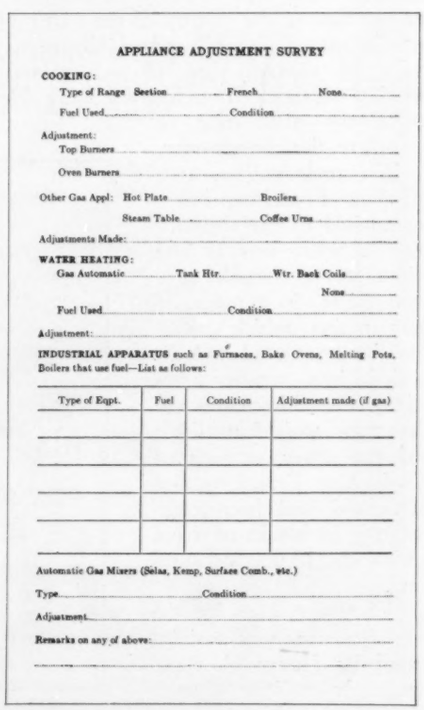
Work Completed 1929

Report on Leak

Referred Consumer to Industrial Gas Dept. for

By Adjuster

Report Appliance Work on Reverse Side



APPLIANCE ADJUSTMENT SURVEY

COOKING:

Type of Range Section French None

Fuel Used Condition

Adjustment:

Top Burners

Oven Burners

Other Gas Appl: Hot Plate Broilers

Steam Table Coffee Urns

Adjustments Made:

WATER HEATING:

Gas Automatic Tank Htr. Wtr. Back Coils None

Fuel Used Condition

Adjustment:

INDUSTRIAL APPARATUS such as Furnaces, Bake Ovens, Melting Pots, Boilers that use fuel—List as follows:

Type of Eqpt.	Fuel	Condition	Adjustment made (if gas)

Automatic Gas Mixers (Selas, Kemp, Surface Comb., etc.)

Type Condition

Adjustment

Remarks on any of above:

This form is used for industrial and commercial adjustment work. Front side appears at left; reverse side at right.

In addition to the above, the following for men assigned to restaurant work only:

Long swab brush (5/8 in. diam. x 6 in. long with wire handle).
Carpenter's brace.
27/64-in. Drill.

EXPLANATION OF CERTAIN TOOLS

The 3/4-in. diameter tapered wooden plug is carried for emergency use in case a man breaks a service riser or houseline.

The Ford valves may be old ones discarded by the garage. By dressing the stem end off round on an emery wheel, the valve may be used to set up inside of cap orifices while they are being peined.

The small orifice reamer, medium size orifice reamer, orifice anvil block, orifice expander punch and orifice reamer handle, are used in connection with adaptor or insert orifices.

The hollow punch is used for punching holes in "Rietz" lighter caps and also for making holes in oven linings to prevent smothering conditions.

The 1/8-in. pipe plug is used to plug the burner manifold on ranges temporarily in case a burner valve is broken.

The carpenter's brace and 27/64-in. drill is used to drill out the present orifice on "Monitor" burners and then set the burner down over the proper size cap orifice which has been screwed on to the burner cock or pipe.

Each adjuster also carried a loose leaf note book which contained a "manual for gas appliance adjustment and survey." Extracts from this manual are appended to this article, and indicate the completness of the information provided therein for the adjusters.

At the top of the survey tags which were distributed there appeared the name and address of the consumer, as taken from addressograph records in the company's billing department. A blue form was used for industrial and commercial adjustments, and a white form for residences and all other types. These blanks, which are shown herewith, provided invaluable data for the company's records, apart from the immediate task of appliance adjustment. Particular attention should be called to the one line, "Attitude of consumer toward company. Friendly—Unfriendly—Unknown." The survey record on the back of the domestic adjustment tags should provide for the Pacific Gas and Electric Company one of the most elaborate and complete records of all prospects for appliances that any company could possibly desire.

At 12 o'clock noon on every working day and at 5 o'clock, all adjustments survey records were turned in to the crew captains, who made their reports on a recapitulation blank for both daily and weekly totals.

In instances where the consumer was not on the premises at the time of the adjuster's call, a card was left advising him that the Pacific Gas and Electric Company would be pleased to call and adjust his appliances at any time he would telephone in and request the service.

Inadequate venting was treated in a forceful and uncompromising manner. Reports to be made out in triplicate and one for each appliance inadequately vented, were supplied to the adjusters in book form. One copy of this report, reading "Notice to..... (Owner or tenant) of premises at..... On adjusting your gas appliances on the above premises today we find that the installation of your..... is inadequately vented for the following reasons:..... You should correct this condition immediately and before the further use of gas therein by you," was left with the consumer, one copy on a pasteboard card was tied to the appliance, and the third was put into the company's files.

At the time of this writing, some 440,133 meters have been changed over to natural gas on the Pacific Gas and Electrical Company's system. With the San Francisco Bay area completed, those in charge of this task feel that the last big problem has been surmounted—and that with a minimum of complaint and interrupted service.

REPORT OF ADJUSTMENTS AND SURVEY

District ..... Week Ending .....

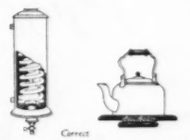
Day of Week	Mon.	Tue.	Wed.	Thu.	Fri.	Sat.	Total
Premises completed							
Calls uncompleted							
Ranges adjusted							
Water htrs. adjusted							
Room htrs. adjusted							
New burners installed							
Furnaces adjusted							
Industrial commercial adjustments							
Total appliances adjusted							
Men in field							

Remarks:.....

Date:..... Captain

Recapitulation blank for daily and weekly adjustment reports of crew captains.

A PAGE from a folder mailed to P. G. and E. consumers in advance of natural gas introduction or appliance adjustment appears at the right. Other pages informed the gas user, how to make temporary adjustment of appliances, prior to arrival of company adjusters. A letter giving the consumer the number of his change-over district, and the approximate date when natural gas would arrive, was printed on the first page of the folder, and the map of change-over districts (reproduced on Page 23) appeared on the back cover.



(1) Sketch showing gas flame at proper height under utensil.

(2) Another sketch showing incorrect height, flames coming up around sides.

1—Before Adjusting See That the Burners Are Clean

The top burners of your gas range may be cleaned by lifting them out and boiling them in a strong solution made by dissolving washing soda or lye. Rinse thoroughly with clean water and then dry. If holes or ports of the burners are closed from food boiling over or dust or lint being drawn in through the air shutter, the gas cannot burn properly.

2—To Adjust the Air Shutter

Loosen the set screw that holds the air shutter in place. Turn the gas valve on, light the gas and then open the air shutter until the flame burns with blue cone with purple edges. Tighten the set screw to hold the air shutter in proper position.

Gas has Odor—Nature does not give natural gas a distinctive odor. The Company treats the fuel so that it smells almost like manufactured gas. No natural gas will be served without this odor.

The advent of natural gas now makes possible economical heating. Prepare now to take advantage of this ideal fuel with Automatic efficient heating equipment that is clean, convenient and healthful.

To assist our consumers in solving their heating problem, the Pacific Gas and Electric Company has a special staff of heating specialists who will be glad to submit their recommendations for your consideration.

PACIFIC GAS AND ELECTRIC COMPANY

P · G · and E ·

Owned - Operated - Managed by Californians

Keep this for future reference

MANUAL FOR GAS APPLIANCE ADJUSTMENT AND SURVEY

1. General

a. The Company desires that its employees have a full understanding, and sincere acceptance, of the few simple rules that

(Continued on Page 52)

A Detailed Procedure for
PURGING A WATERLESS GAS

By LEE HOLTZ

THE editor ventures that this outline of procedure followed in purging a 10,000,000-cubic foot waterless gas holder will generate more than ordinary interest. In the first place, purging as applied to waterless holders is still something of a pioneering operation. One company's experience therefore takes on a special value as a guide to others. In the second place, so much forethought went into setting up the successive steps which put this job across safely and smoothly, that it holds interest as an example of good engineering organization.—*Editor.*

Lee Holtz

THE old saying that "A safe workshop is an efficient one and an efficient workshop is a safe one" was brought home to the writer quite forcibly lately when the Southern California Gas Company's 10,000,000-cubic foot waterless, piston type, gas holder was taken out of service for the purpose of removing the water gas tar and replacing it with a less viscous sealing fluid specially prepared for waterless holder usage.

In preparing to do a job of this nature, a great deal of thought and care had to be exercised in planning the procedure to be followed, and due to the fact that very little information was available regarding work of this character, the matter was still further complicated. However, the A. G. A. committee report on "Recommendations for Purging and Placing in Service or Removing from Service Gas Holders and Other Gas Works Apparatus" was of considerable assistance and was followed insofar as it was practical to do so. Of course, one does not usually expect to find a cut and dried rule that can be used in every detail on a construction job and particularly one of this kind where the first and last thought is safety, but in any event previous methods and experiences do serve as a guide and it is with this thought in mind that this article is presented.

Before actually outlining the procedure for this particular job, many considerations were taken into account and after many careful discussions on the subject a program was prepared which was to be followed to the letter, if possible.

The first consideration, of course, was to plan the work so that it might be executed in as safe a manner as possible. This thought directed the preparation of the procedure, and as a further safety measure the company's safety department was thoroughly familiarized with the procedure as outlined. As a result the safety department was able to render maximum cooperation. The second guiding principle was that the most efficient organization would be one with as few workmen as possible in order to eliminate confusion and misunderstanding and to facilitate the matter of supervision by one directing head; third, that owing to the fact that the holder is located in a residential district, as little commotion and noise as possible would be desirable from a public relations standpoint; fourth, that the holder should not be kept out of service any longer than necessary and hamper the operating department in maintaining dependable service in case of a line break or other unforeseen service interruptions that can happen to an operating department of any gas company at the most inopportune time; fifth, that the holder, while out of commission, would offer an excellent opportunity for a thorough inspection and ample time for repairs to be made if necessary; sixth, that the job should not be cluttered by the gathering of unnecessary data, making necessary the keeping of endless tabulations—even though the resulting information might be intensely interesting. Only pressures beneath the piston, at the exhaust jets, and samples of gas taken from under the piston for chemical analysis were to be considered as essentials and were to be watched with utmost care.

Following is the procedure which was originally outlined; with but few exceptions it was followed to the letter:

Preliminary Preparation

1. Prepare for disposal of approximately 44,000 gallons of tar now in holder system by having tank cars or oil drums on hand and properly located for receiving the tar as it is pumped from the holder; purchaser of tar to furnish this equipment and arrange for transportation facilities. An ample number of containers should be on hand at all times during the tar pumping period to avoid delay.

2. Company supplying oil seal to be notified and prepared to start new oil shipment on a suitable date to dovetail delivery with disposal of tar.

3. Insofar as it is possible, all materials, tools and safety equipment necessary to complete the job shall be inspected and set up on the job ready for use; this work to be done by the Southern California Gas Company's construction department.

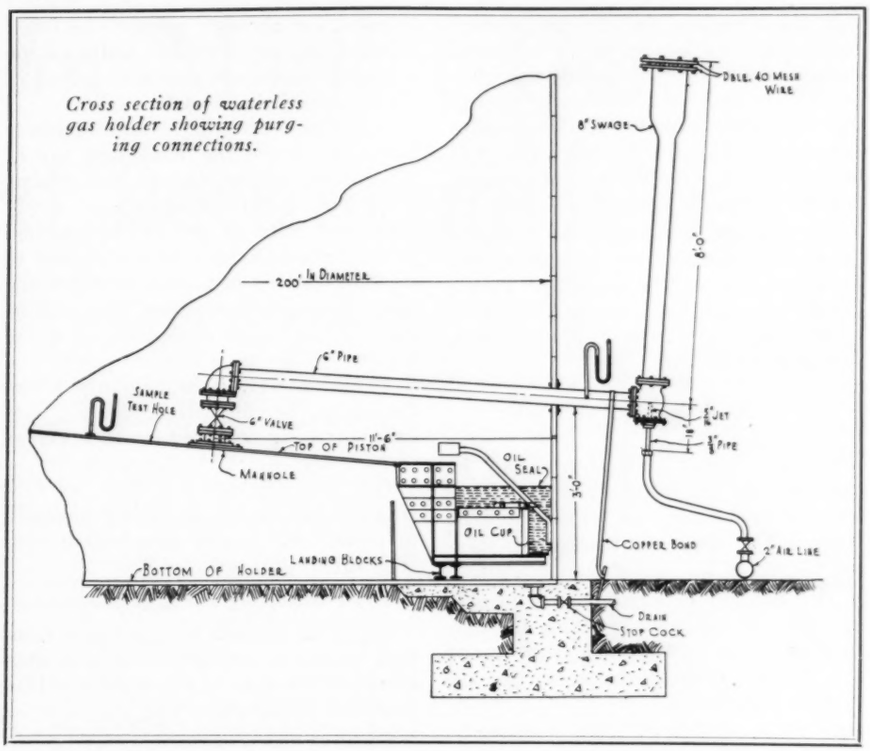
4. Cut six holes, equally spaced around the periphery of the holder, in the concrete foundation for condensate drains in bottom of dam. The location of these holes will be just to the right of the oil sumps. Also, dig sump holes, construct drain troughs and install drums at drain points to receive last of tar in bottom of dam.

5. Prepare to physically disconnect the holder from the compressor room and tranmission system. This will mean the removing of fittings in the suction and intake lines. Before removing fittings, copper wire bonds should be placed around fittings and connected to the pipe in a substantial manner.

6. Special precaution shall be used to prevent fire of any nature either on the station site or property adjacent thereto, particularly incinerator or open trash fires. No matches or lighters will be allowed in or about holder at any time.

HOLDER

General Superintendent, Manufacture and Distribution, Southern California Gas Company



Cross section of waterless gas holder showing purging connections.

7. It is to be generally understood that no person other than those actually engaged in the work will be allowed on the grounds at any time while work is in progress.

8. Local airports are to be notified when aviation signal lights on top of holder will be out.

Procedure

1. *Landing Piston:*

(a) The 3,000,000-cubic foot water-sealed holder will be used in conjunction with the landing of the piston in the 10,000,000-cubic foot waterless holder.

(b) The water-sealed holder will be lowered to a point where the first lift is up. At this point there will be a 5½-inch water pressure in the holder.

(c) The waterless holder is to be pumped down to 300,000 cubic feet (total volume). The volume will be determined by outside gage board and by counting the sheets. A man will ride the piston down and communicate with the outside by rapping a number of times on the shell when the proper sheet has been reached. At this point there will be about a 9½-inch water pressure in the holder.

(d) The gas compressors will then be shut down.

(e) The gas line between the two holders will then be opened and by pressure differential the gas will flow from the waterless to the water-sealed holder until piston has been landed.

(f) Pressure maintained on holder shall not fall below 5½ inches or above 6½ inches water pressure until purging is commenced.

(g) Before oil pump motors are disconnected the tar level in cup shall be increased 3 inches above the height normally carried to care for seepage during purging.

2. *Purging Holder:*

(a) After piston is landed, it will remain on the bottom rests until the completion of the job or until it is time to refill with gas.

(b) The remaining 170,000 cubic feet of gas must be removed and the space beneath the piston thoroughly purged and tested before workmen may be allowed to enter.

(c) Air will be used for purging.

(d) Purging openings will be provided on top of the piston by cutting 6-inch holes and attaching 6-inch flanges and gate valves on four manhole covers which are evenly spaced around the top of the piston and are 11 feet from outer edge. The gate valves will be installed against holder pressure. To prevent gas from escaping into the space above the piston, it will be necessary to drill and tap holes for stud bolts, using soap on drill and tap. The manhole plates are ⅜-inch thick, allowing enough stock and ample thread. The studs are to be of sufficient length to allow lock nuts to be put on under the plate after purging. When stud bolts are all in, a 6-inch flange will be bolted to each manhole plate and a good grade of gaskets used. A 6-inch short nipple and a closed gate valve will then be screwed to each flange. After valves have been installed, fill to top with oil (sealing oil). A standard tapping machine will then be connected to gate valve and a 6-inch hole cut into manhole plate. This will be done by an experienced tapping machine operator, who will close the gate after the cut is finished.

(e) Six-inch pipe will then be installed from the four valves and project out through the holder walls through openings that are located directly opposite the manholes on the piston. The two 6-inch pipes on the opposite side of the holder from the 36-inch inlet will be provided with 6-inch air jet exhausters, each with a capacity of 30,000 cubic feet of free air per hour at 100 pounds on compressed air line at jet. The other two pipes will be open to the atmosphere, which will allow fresh air to take the place of the gas being exhausted by the jets.

(f) At the same time that the exhausters are being installed, the 36-inch gas suction line and 8-inch high pressure intake or filling line will be disconnected, leaving the holder physically disconnected from all gas lines.

(g) The 36-inch opening and the two remaining 6-inch openings on top of the piston will be used to admit air under piston during purging period. Care must be used to balance the air intake of these three openings. In other words, if a full 36-inch opening is used, the two 6-inch openings on top of the piston will become somewhat useless. The 36-inch valve at the holder can be manipulated to offset this difference.

(h) All openings will be screened doubly with 40-mesh brass screen as approved by the American Gas Association.

(i) The 2-inch line which has been laid around the outside of the holder

will be connected to the six ¾-inch equalizing lines located at the oil pump sumps for the purpose of delivering compressed air under the piston while purging and while men are working under the piston; also, the 36-inch valve will be left open for the purpose of creating a draft if possible beneath the piston.

(j) Compressed air will be furnished by portable compressors to operate the jet exhausters and to supply air to the 2-inch manifold around holder. Five such compressors are available, with capacities as follows:

1—7 x 6 @ 9,720 cu. ft. per hour
1—6 x 6 @ 7,080 cu. ft. per hour
3—5 x 5 @ 5,460 cu. ft. per hour

The two largest compressors will be used for the jet exhausters and one or more of the smaller compressors will be connected to the 2-inch manifold supplying air to the six ¾-inch connections.

(k) Samples of air under piston will be taken at different locations through small openings tapped through the top of the piston, midway between the six ¾-inch equalizing lines and at the 6-inch pipe ahead of the exhausters. Sampling will continue until no trace of the gas is left. To replace 170,000 cubic feet of gas with air should require approximately five hours' time; however, 18 hours' time will be consumed for purging in order that the space may be replaced several times by free air.

(l) The drip pots will be vented on both sides of baffle and filled with water to drive out all gas.

(m) The electric wiring to holder will be disconnected during purging period.

(n) Air compressors are to be grounded with copper wire bond.

(o) Exhaust jets are to be grounded with copper wire bond.

(p) All air lines are to be thoroughly blown before delivery to jets is made to clear any grit or scale in pipes.

(q) Intake to air compressors are to be covered with 40-mesh copper wire.

3. *Removing Tar from Holder System:*

(a) After holder is purged, the next step will be to pump the tar from the dam into tank cars or drums. If drums are used, they shall be placed conveniently close to the six oil sumps. If tank cars are used, three lines shall be connected from the three most convenient sumps to the switch track. The present tar pumps located at sumps will be used.

(b) Six 3-inch drains are to be installed in bottom of dam and spaced at equal distances around the holder. These will be used to pump and drain off some 4500 gallons of tar that cannot be pumped off through present facilities. These drains are to be left and used for removing condensate that may collect in the bottom of the oil dam.

(c) Two men will be sent in under piston to scrape the remaining tar in the bottom of the dam to the drains. These men will be provided with safety lamps and belts. Ropes will be attached to the belts and other men stationed at manholes on top of pistons to watch the men working under piston. Air will be pumped into holder while men are working.

(d) While tar is being pumped out, the tar in the cup will be dumped into dam by raising weighted levers at center of each bay.

(e) Tar that does not run over rubbing bar will be left in cup permanently to protect the canvas attached to rubbing bar.

4. *Putting New Oil into the Holder:*

(a) The oil will be gravitated from tank cars into one oil sump and then moved to the dam by the regular holder pumping equipment. The cup will be filled by pump equipment from oil sump through a 3-inch rubber hose placed in the manhole just above the cup.

(b) The dam will be filled to the desired level of 10 inches and the overflow weirs set.

(c) While oil is being put in holder, the manhole covers with purging pipes will be put into place. After all the oil is in and seal established, gas connections will be made to holder and all air purged from under piston through the four 6-inch pipes that were used for purging. These pipes will be screened as before.

5. *Putting Holder Back into Service:*

(a) After the purging is finished all openings are to be closed and connections made for refilling with gas.

(b) The seal plates over the outlet mains should be lowered until full slack is felt on the center chain.

(c) The piston is now ready to be floated and holder can be filled with gas.

Applying the Procedure

The job was started as per schedule, the holder was pumped down and the piston landed as outlined. The physical disconnection then took place, the electric current was cut and purging commenced. A portable water column was connected to an opening at the top of the piston, and remained for the entire purging period. By the "U" tube reading it was found that a consistent vacuum of 1½ inches water pressure was maintained. Columns were also placed at the jets, showing a differential of 3 inches of water pressure at 75 pounds air pressure. The jet orifices were drilled to 5/16 of an inch.

At the end of 12 hours' purging, a chemical analysis of a gas sample taken from the top of the piston showed approximately 13 per cent total gas. In four hours' additional time, this had been cut to 8 per cent. After six more hours, this had been cut to 1.4 per cent. The compressors were then shut off to allow the atmospheric condition beneath the piston to settle for two hours. The compressors were then put on again and after two hours more of purging, only a trace of gas could be found. Purging, it will be noted, occupied a total time of 26 hours. Since it was impossible to forecast definitely the rate at which the gas volume would be diluted, the 18 hours originally alloted for the purging task, lengthened out to 26 hours as detailed above.

The jet tubes were then disconnected from the stand-pipes. The two exhausts and one air intake were allowed to remain in service for ventilating purposes, and the 36-inch valve was fully opened. By doing this a draft was created beneath the piston. One manhole cover on top of the piston was removed to allow two men to enter with scrappers and push the heavier tar on the bottom of the dam into the drains.

The tar was pumped from the dam through the oil sumps into drums, approximately 800 in number, using the six oil sumps.

After the dam and cup had been filled with oil, the rollers checked and repaired, and the intake fitting in gas line replaced, the holder was ready for air purging with gas. Samples were again taken, and chemical analysis run. The jet exhaust pipes as well as air intake connections were left intact and used as in the previous purging. In addition to gas analysis, samples of the air-gas content beneath the piston were taken from the equalizer lines at the oil sump at the bottom of the holder. Similar tests were taken from the top of the piston. These samples, gathered in bomb receptacles, were used for the purpose of making explosion tests.

After approximately six hours of purging, gas analysis and explosion tests showed only a trace of oxygen present.

All vent pipes were next disconnected from valves at the top of the piston. The four manholes in the holder sides were closed and refilling of gas commenced.

At 9½ inches water pressure the piston lifted from its resting blocks.

Perhaps the most outstanding feature of this entire job, and one which brought much satisfaction to those in charge, was the fact that it was performed without accident of any description.

120 Per Cent Market Gain *for* Liquefied Petroleum Gas

MARKETING production of liquefied petroleum gases during 1929 reached a total of 9,925,698 gallons, an increase of 120 per cent over the 4,522,899 gallons marketed during 1928, according to the United States Bureau of Mines, Department of Commerce, following the completion of a survey conducted by E. B. Swanson, Acting Chief Petroleum Economist, through which the first quantitative data on production in this recently developed industry have been assembled. Information received from representative producers regarding shipments during the first five months of 1930 indicates that the rate of growth established during 1929 is being continued. Of the 1929 distribution, 113,080 gallons were shipped outside the United States, principally to Canada and the Hawaiian Islands.

The production of Pintsch gas, a compressed gas made by cracking oil and used principally as an illuminant; the manufacture of Blaugas, a liquefied petroleum gas made from gas oil; and the extraction and liquefaction on a relatively small scale of some of the lighter fractions of casinghead gasoline, constitute a background, extending over approximately half a century, for the recent developments in the commercial manufacture and sale of liquefied petroleum gases. In the present stage, the natural gasoline extracted from natural gas is the principal source of the lighter hydrocarbons suitable for liquefied petroleum gas manufacture, although the refinery gases resulting from various oil distillation processes constitute a potential source.

The need of petroleum refiners for more stable grades of natural gasoline necessitated the removal of more volatile fractions on the raw casinghead gasoline. This was accomplished originally by "weathering," in which the major portion of these volatile fractions was lost, but in recent years the use of fractionating columns for the separation of the fractions has permitted their recovery and utilization for domestic and industrial purposes. These lighter hydrocarbons occupy the intermediate zone between the so-called permanent gases and liquids. They remain in liquid form when under pressure but are gases at atmospheric pressure and normal temperatures. Consequently, they may be stored and transported as liquids under pressure in special cars, tanks, wagons, and cylinders and used as gases at atmospheric pressure. Propane and the butanes form the compounds in the liquefied petroleum gases now definitely established, but pentane, a liquid at average temperatures, was included in the survey to the extent that it is marketed for purposes similar to the two lighter fractions.

THAT the distribution of propane, butane, and related gases has been growing with great rapidity during the past two years is generally appreciated. The exact extent of this growth, however, is now made known for the first time, as a result of a comprehensive survey conducted by E. B. Swanson, acting chief petroleum economist of the United States Bureau of Mines. To the present report covering this survey there is appended a list of producers and distributors of liquefied petroleum gases.

Readers of *Western Gas* will note with interest the significant progress being made in the marketing of butane and related products in Western United States, where construction of central butane plants is proceeding apace.—EDITOR.

The record of the production of liquefied petroleum gases may be extended as far back as 1912, when Blaugas was established as a commercial product, but, for the purpose of the Bureau of Mines survey the record of marketed production is extended only through 1922 the period during which three or more companies were annually engaged. The annual marketed production of liquefied petroleum gases is given in the following table:

Marketed Production of Liquefied Petroleum Gases. (1922-1929)

Year	*Gallons*
1922	222,641
1923	276,863
1924	376,488
1925	403,674
1926	465,085
1927	1,091,005
1928	4,522,899
1929	9,925,698

The use of liquefied petroleum gas as a domestic fuel in territories not served by gas mains was the first important development in the use of the products. Propane, self-vaporizing at temperatures above minus 44°F. and with a heating value of approximately 2,500 b.t.u. per cubic foot, is most widely used for this purpose. In the two-drum system of service, two cylinders of fuel are installed in a special cabinet outside the customer's residence and the gas is piped through a regulator to the appliances. Upon the exhaustion of one cylinder, the second is turned on and the empty cylinder is returned to the bulk station to be recharged. In the one-drum service, a single cylinder is furnished the customer. This cylinder is periodically charged from a service truck, the cylinder being weighed before and after charging, and the customer is billed for the actual amount of fuel used. Cylinders are of several different sizes—25, 35, 40, 50, 60, 88, 100, and 150 pounds—but the more common sizes are 60 and 100 pounds.

The number of customers served with "bottled gas" increased from about 20,000 in 1928 to approximately 55,000 in 1929, according to the reports submitted to the Bureau of Mines during the survey. All states were included in the national distribution of this fuel.

The price per pound to the consumer in the Pacific Coast territory range from 9.5 to 10.5 cents, while east of the Rocky Mountains the price ranged from 11.3 to 14.5 cents per pound, according to the distance of the consumer from the source of supply.

Special attention has been given to the utilization of liquefied petroleum gases in conjunction with the gas industry; to replace gas oil in carburetting gases of relatively low thermal value to the required calorific standard; as a base material for manufactured gas; for the re-carburetion of gases to offset the loss of thermal value in high pressure transmission systems; to meet peak load conditions and as a protection against interruptions in service; and as a source of gas supply to communities which are not large enough to warrant the installation of manufactured gas plants or the

(Continued on Page 56)

Accounting Standardization

Uniform Procedure Has Special Advantages for Affiliated Utility Groups

By CLARK P. READ
General Auditor
Lone Star Gas Company

DURING the past 10 or 15 years a great deal of constructive thought and effort has been devoted to standard accounting reports, classifications and records by the various associations of corporations engaged in furnishing utility service. In reviewing the results of these efforts we might be repaid by pausing to give a moment's thought to the means employed and results obtained by standardization and correlation of accounting procedures, forms and methods within a group of affiliated utility corporations where the same ends (in more complete detail) may be said to be desired as that being striven for by the associations of operating companies cooperating with the regulatory bodies of State and Federal Governments.

If a group of corporations can simply be classed roughly as being in a single line of endeavor, standardization would be more or less a matter of delegation by the executive of the responsibility for such uniformity as is desired. But when such responsibility is so delegated to cover gas development, production, pipe line, compressor station and gasoline plant operation, oil development, production, pipe line operation and natural and manufactured gas distribution, along with costs of manufacturing gas, it necessarily requires not only that a great deal of thought be devoted to detail steps, but means that much seemingly useless experimentation be indulged in, which, in the final analysis may be very useful in future problems.

Initial steps may be taken either with the source or origin of accounting entries (and routine) or with the balance sheets, but if speed is desired, undoubtedly the start should be made with the balance sheet since the terms thereof are governed by more or less universally accepted descriptions. Even here, however, a close analysis is necessary because of misconstrued condensations of groups of related accounts. Therefore, a complete description of balance sheet accounts must be had and classifications by name must be strictly adhered to. In consolidating the balance sheets of a number of corporations, condensations must, of necessity be made. It has been found a very workable plan simply to describe a group of related accounts by a broad name, setting up sub-codes below it to fit the individual needs of the business or of special accounts carried by one or more corporations which are not common to all.

Clark P. Read

Following in natural sequence, of course, the financial reports must be made uniform. This might be said to be dependent almost wholly upon the adoption of a uniform classification of accounts, which should be detailed so that erroneous interpretations will be minimized and authority over this classification both as to interpretation and revision should be clearly delegated to some one official of the management staff so that divergencies of opinion may be cleared through him for ruling. This officer, too, should have the responsibility for the consolidated financial reports of the group.

Standardizing Methods and Forms

Having accomplished the ends desired by the management of securing uniform statements of financial condition and analyses of earnings, the question of standardization of methods and forms arises of its own accord. This is probably the most difficult of accomplishment of any of the steps necessary to the uniform accounting plan, as here it will be found that matters of personnel, policies of management, personal opinion on proper routine, etc., all play their individual parts in hindrance to the standardization plans.

Clerks who have used a certain form for years will champion its use as against a similar form, containing like information but more properly applicable to all needs. Policies of operating managers and local accounting officers, too, often affect efforts at standardization, and these probably constitute the most difficult problem, since in most cases the tendency is to make a secondary consideration.

However, under any conditions, standardization can be accomplished and uniformity may be had for:

Financial Reports
General Accounting Records
General Office Procedures

Records of original entry, such as purchasing, stores and commercial department forms, etc., are difficult of standardization due, ordinarily, to the fact that these are generally localized. However, if a central purchasing power is used, stores records may be made to suit the needs of the purchasing facilities, thus forcing a certain measure of uniformity. Therefore, if the accounting officer in charge is closely in touch with his situation he may be able to work out his plans more easily in this respect. Commercial department standards may depend on the size of towns and cities the operating company covers in its service.

The ends to which standards of accounting may reach are almost limitless and consequently the resultant economies and efficiencies to be gained are of gigantic proportions. Thus, it behooves the management to be in possession at all times of information concerning these possibilities and undoubtedly the best means of keeping the issue alive is through an intelligently directed force of internal auditors to carry out a continuous audit of accounting distribution,

(Continued on Page 62)

PACIFIC SERVICE
P·G·and·E·
It costs less to use
Natural Gas
for Healthful House Heating
convenient cleaner
PACIFIC GAS AND ELECTRIC COMPANY
CONVERSION BURNER
It is both easy and inexpensive to change your present Furnace or Boiler to burn Natural Gas

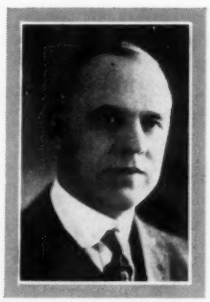
Two of the window displays which have been used in connection with the Pacific Gas and Electric Company's campaign on househeating conversions. Note the clear presentation of the conversion burner's construction features in the display shown at the right.

Conversion Units Build Rapid Load *for* P. G. *and* E.

By H. M. CRAWFORD
Sales Manager
Pacific Gas and Electric Company

AT the time the Pacific Gas and Electric Company management announced its intention to introduce and serve natural gas to its consumers, the sales department was confronted with the problem of selling load building appliances in sufficient volume to counterbalance the huge cut that would be felt in domestic revenue due to the increased heat content of natural gas.

All types of appliances were considered and after a careful review of previously made surveys, it was decided that the house heating field would prove the best spot for concentrated effort. And in this field, major heating appliances quite naturally offered the most attractive source of revenue. But the length of time in which the management desired to have the revenue loss rebuilt was short. This fact militated against embarking first of all on a regular replacement program, designed to sell new gas-fired equipment to replace existing solid fuel apparatus. The conversion of existing equipment was the only alternative. In making this decision the company recognized that at the best, concentration on the sale of conversion burner equipment rather than complete new replacement installations was a supplementary activity. The company's house heating sales department, and the complete sales plan of company and dealer cooperative activity was not in any way to be disturbed, but rather strengthened. Of over 400,000 consumers on the system, not more than 50,000 or one-eighth of the total could be classed as prospects for conversion equipment. The remaining seven-eighths were and still are prospects for complete gas designed heating plants.



H. M. Crawford

F. U. Naylor, manager of gas sales, and A. C. Miller, domestic sales engineer, immediately began to organize for this new activity made possible by the high B.t.u. gas which was to be served. While sales plans were being perfected, an engineer was sent on a trip of inspection to check up on the results and experiences of conversion burner drives made by other public utilities throughout the country.

By the time the engineer's report was received, sales plans were completed and the activity involved was cautiously started.

During the months of November and December, 1929, 100 test installations were made on a section of the company's system that had already been cut over to natural gas. Mr. Miller took personal charge of sales and installations on the test jobs. Sub-meters were installed in each instance, and these were carefully checked and gas consumption recorded every week. Every possible care was taken to secure complete operating data, as an insurance of the future success of the sales campaign in project.

It is both healthful and safe use
Natural Gas
in furnaces and boilers now burning other fuels
Natural Gas costs less to use
PACIFIC GAS AND ELECTRIC COMPANY
P · G · and E ·
When you change your furnace to burn Natural Gas
You'll have clean, automatic heating
Already 3,700 families have said "Goodbye forever to furnace drudgery"
Change furnace drudgery into automatic, care-free heating
Replace furnace drudgery with clean, automatic heating
Change your present furnace to burn Natural Gas now — before the Fall rush
and say "Goodbye to this forever"
$10 down

A strong campaign of newspaper advertising supported the Pacific Gas and Electric Company direct sales work on conversion house-heating installations in northern California. Typical copy is shown above.

Burners of various types and prices were tested. After the results of a complete heating season on these test installations were compiled and analyzed, it was definitely decided that through the sale of conversion burners, lay the answer to obtaining the greater portion of the quick revenue desired. It was also decided that effort would be concentrated on thermostatically controlled units. The Occidental burner, made by Steiger and Kerr Stove and Foundry Company, San Francisco, was selected, and all models standardized on. Accordingly on March 1 of this year, a 12-month drive on conversion burner installations was started. This drive opened simultaneously in all of the divisions of the company's territory that were scheduled to have natural gas by the coming heating season.

A quota of 10,000 major conversions was set—9,500 for hot air furnaces and Arcola hot water systems, and 500 steam and hot water boiler conversions. Engineer J. H. Hill was given supervision of the boiler conversions.

A totally new sales organization of 125 salesmen and 12 crew captains was provided for. The size of the sales force was such as to enable salesmen to make a personal call on each consumer before July 1, that is to say, within four months of the start of the drive. In most instances the salesmen were making their calls in advance of the actual turning on of natural gas; this in order that the consumer might have first hand knowledge of the company's proposition before contracting for the coming winter's fuel supply.

Salesmen were instructed to record the name and address of each prospect, as well as to sell conversions, for it was recognized in advance that many prospects would not close until natural gas was actually being delivered to them. In this way an adequate prospect file was started. The names contained in this file were subsequently checked against the names and data turned in by the change-over crews as they covered the same ground some weeks or months later, in their routine of adjusting all appliances to the new natural gas.

Before any major sales work was started a two weeks central heating school was held, which was attended by division sales managers, crew captains, salesmen and installation men. Mr. Miller had compiled for the use of the salesmen and installation men a manual in which was incorporated the experience gained from observation of the test installations of the previous winter. General instructions, sample sales talks, technical data and operating costs were all included in the table of contents.

A live working display of every type of conversion to be encountered was also set up for the use of the school. To insure results from this preliminary educational work, every man was required to pass certain examinations on the work covered. The final item in the course was the dividing of the class into small groups which were taken to homes to witness an actual conversion installation being made.

The work of the salesmen is being supported by an organized advertising campaign of considerable scope and magnitude, which has been prepared by the company's own advertising department under the direction of J. Chas. Jordan, in cooperation with the sales department. The following mediums of public approach are being used: Newspapers; billboards; bill stickers (miniature reproductions of current billboards); a series of three personal letters to all prospects, and a series of three direct-by-mail broadsides, one of which features testimonials from users. The general trend of all of the advertising is to feature the convenience of gas fuel regulated through the use of the thermostatic control.

Live displays of converted appliances have been set up on the floors of every district office and are operated for demonstration purposes. A further display of every type of furnace and circulating heater common to the P. G. and E. territory is set up and in operation in the company's display room on Beale Street, adjoining the main office at 245 Market Street, San Francisco.

The sales plan in its essence is as follows: Uniform prices; uniform terms; definite requirements from salesmen; definite procedure for installation and inspection.

The price of the conversion unit is the same for any size of hot air furnace regardless of the size burner required, i.e., $110 with thermostatic control, $65 with snap acting chain control. These same prices also apply to all Arcola heating plant conversions. Other uniform prices apply on each type of steam or hot water boiler converted.

Salesmen work on a definite quota of weekly sales required. Salesmen who do not produce are replaced. The sales-

(Continued on Page 62)

How Gas Serves in

OIL TOOL MANUFACTURE

By FRANK JACKSON

Industrial Engineer
Fort Worth Gas Company

AMONG the many and varied types of industrial concerns connected to the service of the Fort Worth Gas Company is the large plant of the Texas Steel Company, listed as one of the largest manufacturers of oil well sucker rods, used in the pumping of oil wells; also in the manufacture of miscellaneous other equipment common to oil field operations.

A trip through this plant, from the pile of scrap metal to the finished sucker rod, holds the interest of one who appreciates scientific operation and the precision here required in order that the finished product meet the properly exacting requirements of the oil field operator.

Let us start then at the pile of scrap. And such a scrap pile! Here one would think was surely the solution of the ever-growing problem of disposition of old auto parts. Auto springs, crankshafts, drive shafts, frames. Also boiler plate, all kinds of structural steel, channel irons, angle irons, I beams, etc.—finished, as far as past service is concerned, but soon to be transformed by the aid of natural gas to a new field of usefulness.

Fort Worth and vicinity furnish about 300 tons of this junk scrap per month, which is the quantity used during the average seasons' operations. Of this total practically 75 tons per month are converted into castings and the remainder into sucker rods and reenforcing bars.

A large chute is filled with scrap metal from this scrap pile, picked up and carried by an overhead cantilever crane to a furnace which is tilted over and a door opened. Into this door is poured the chute full of scrap metal, the furnace is again brought to an upright position and the metal is melted, refined and carefully alloyed. A close chemical inspection is maintained at this point insuring against any element of error creeping in during preparation of the metal used in the rod manufacture.

A large ladle of 10 tons capacity is now lowered into a pit at the base of the furnace, the furnace tilted in the same position as for charging, and from the opened furnace mouth pours forth a molten river of metal into the waiting ladle.

In preparing this type of ladle for its firey burden it is previously given a lining of fire clay. This clay after application is dried for period of one hour and 15 minutes the first 45 minutes at slow heat and 30 minutes at intense heat, a temperature of approximately 2000° F. being attained and held during the latter 30 minutes. This lining serves to prolong the life of the ladle in the rigid service to which it is subjected.

The giant ladle carries its load of molten metal to the cast iron ingot moulds where the ingots are poured, ready to be made into sucker rods. The metal is also poured into sand moulds to form castings for road construction machinery, oil field machinery and various miscellaneous equipment.

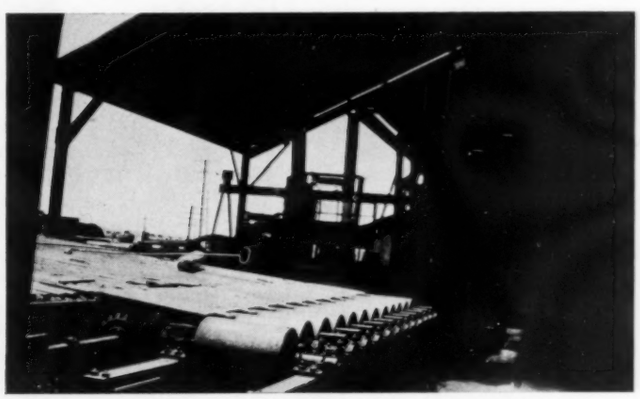
The castings are then carried to the large gas-fired car-type annealing furnace the capacity of which is 6 tons. In this the castings are slowly heated until a temperature of 1650° F. is attained. This temperature is maintained for a period of one hour for each square inch of cross section of the largest casting in the car.

All this work, due to the use of gas fuel, requires the minimum of attention on the part of the operator, allowing him to concentrate his efforts and time on other duties requiring his attention. At the same time the recording pyrometer shows the exactness of temperature control during the period of the annealing process.

In the moulding of ingots the molten metal is poured into the moulds and allowed to "set." A hook is placed in the end of each ingot to facilitate handling. The ingots, ranging from 90 to 380 pounds in weight, this depending on size of bar desired, are removed from

(Continued on Page 60)

The Fort Worth scrap pile, by the help of natural gas is transformed into oil well sucker rods.



Roller type conveyor for transferring ingots into gas furnace in plant of Texas Steel Company.

A Chain *of* Model Kitchens

Visualizes Gas Appliance Service

By WALTER D. THURBER

Manager, Department of Advertising and Publicity, Southern Counties Gas Company

SOME time ago the Southern Counties Gas Company decided to install a chain of model kitchens in a number of its larger district offices throughout southern California. Four of these kitchens have already gone into service, and have operated sufficiently long to establish their value. At Santa Monica, Whittier, Santa Ana, and Monrovia the gas company model kitchen institution is already at work, and is being put to effective use by everyone from the hostess immediately in charge to the district manager.

W. D. Thurber

The purpose of these kitchens is twofold:

1. To visualize for the domestic consumer the convenience, the economy, and the beauty of a kitchen completely equipped with modern gas appliances.

2. To build increased good-will. In each case the kitchens are dedicated to the women of the community by the district or division manager.

Contrary to the usual practice in kitchen location, nearly all of these model kitchens are "in-the-front-of-the-house." They are built in the front of the business office, near the main entrance and front directly on the street. Separated only by a plate glass window, all who pass the gas company office have an uninterrupted view of the kitchen and of everything that takes place in it.

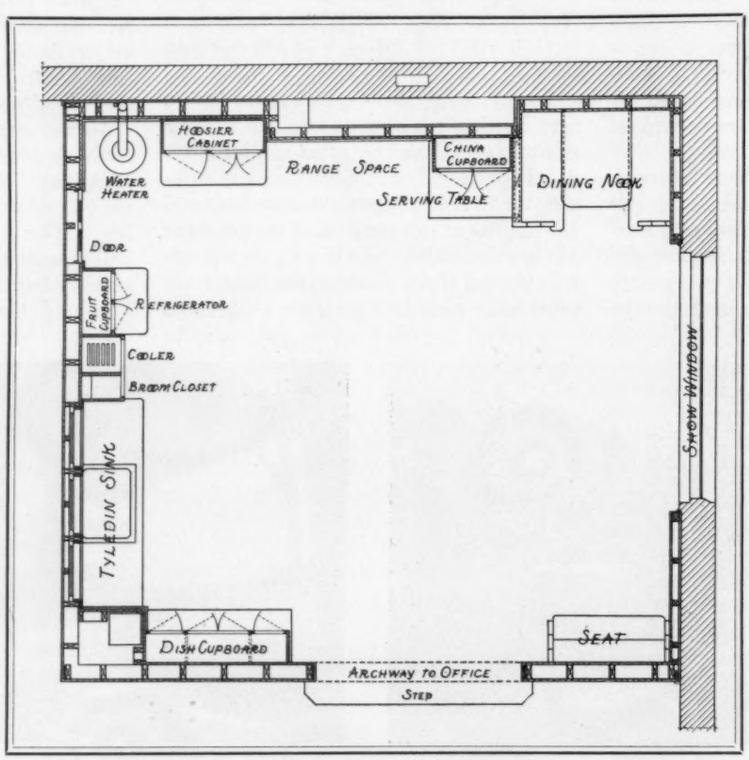
In the morning the company's hostess is seen doing her baking, preparing her desserts and salads, interrupted from time to time by an interested group of visitors admiring the beauty and the convenience of the kitchen; watching at close range the preparation of foods; asking questions; inspecting the gas appliances.

In the afternoon the hostess is observed serving samples of her cooking; holding an informal reception for all visitors; distributing recipes; explaining the many advantages of the modern gas range, the gas refrigerator, instant hot water service, the step-saving arrangement of all of the kitchen equipment, etc. The attraction often proves irresistible and the sidewalk spectator is drawn to the entrance on into the kitchen for a share of the delicacies being served within.

Naturally, every effort was put forth to make the kitchens attractive as well as convenient. Pleasing combinations of color in the tile work, in the wood work, furninshings, windows and floors were a major factor in the creation of each kitchen.

In each kitchen is a canary or a pair of love-birds in an attractive cage—a constant testimonial to the safety of gas.

A specialist in kitchen designing was employed to prepare the plans for the kitchens, in cooperation with company managers. Care was taken to locate cupboards, sinks, pantry shelves, china closets, in relation to the range, refrigerator, breakfast nook, kitchen work table and cooler, with a view to the obvious saving of time and labor. Entrance to each kitchen is conveniently made from the main business office or the street. A floor plan of one of the kitchens appears on this page.



Floor plan of Southern Counties Gas Company model kitchen at Santa Ana, Calif. The show window at right looks onto the sidewalk, while the archway shown at lower part of floor plan leads directly to the main office display floor.

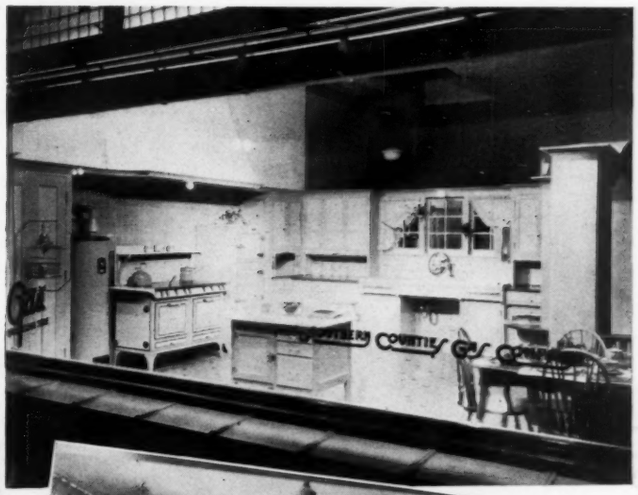
While the kitchens are regarded as a direct part of the company's home service, their operation may or may not be under the direction of the district home service director. Some of the districts which do not have home service workers are equipped with a model kitchen in charge of a hostess who is directly responsible to the district manager.

The hostess, is really a hostess, in the social sense, and is not a sales person. She receives her guests graciously and shows them through the kitchen much as any woman would do when entertaining guests who asked to see her kitchen. And, in the same manner, the guests are offered a bit of refreshment, prepared earlier

FOUR of the model kitchens located at Southern Counties Gas Company district offices in southern California:

At Right: The Whittier kitchen.

Below: Santa Monica kitchen.



Above: Kitchen at the Monrovia office of Southern Counties.

At Left: This kitchen is located at the Santa Ana district office.

in the day in full view of any who might pass by the window. And yet there is a distinct merchandise sales "tie-in" with the kitchens. To a guest who manifests particular interest in an appliance or appliances, the hostess remarks that she will be glad to see that descriptive material is mailed within the next day or two. In this way a prospect's name and address is listed and a salesman calls to deliver the printed matter personally or follows-up the mail delivery of descriptive literature by a personal call shortly after.

The salesmen often use the model kitchen for demonstration purposes for the benefit of prospects who are still "on the fence." Floor salesmen have a convenient illustration of the appliances which they sell, placed in their natural environment. District managers do not hesitate to say that while the model kitchens are not used directly to handle the sales of merchandise, nevertheless, they are producing more sales prospects than any other single company activity.

Upon the completion of each kitchen it was formally opened with a public reception, to which the women of the community were especially invited. Refreshments, flowers and music added to the general interest in these special occasions. Leading women of the town, including the wife of the gas company's district manager, usually acted as honorary hostesses. At Whittier, a town of 14,808 inhabitants, more than 1,700 persons attended the opening. The attendance at the Santa Monica opening was in excess of 2,900. The population of Santa Monica is 36,993.

The kitchens supply a frequent vehicle for actual news which is accepted at par value as news copy by the local papers.

(Continued on Page 58)

Construction scenes from the Southern Union Gas Company line being laid to New Mexico centers for the Albuquerque Natural Gas Company. UPPER, left: At the mouth of Kutz Canyon. UPPER, right: Head end of line-up gang entering the New Mexico "Bad Lands." LOWER, left: Bending gang on 10-inch pipe. LOWER, right: Right-of-way machine clearing the path for New Mexico's longest natural gas carrier.

Natural Gas Crosses *the* Continental Divide

Line Construction in New Mexico Has Its Problems

By CRAIG ESPY
Mid-Continent Manager
WESTERN GAS

BUILDING a 150-mile road that would permit of heavy hauling; a temperature with 45 degree variance between night and day; and the laying of pipe across a country beset with canyons, numerous sierras and peaks belonging to the Rocky Mountain system, are recounted by engineers of the Southern Union Gas Company of Dallas, Texas, as among the difficulties this company is surmounting in construction a 10- and 12-inch natural gas line from the Farmington, New Mexico gas fields to Albuquerque, Santa Fe and Las Vegas, chief population centers of New Mexico.

This line, which is being constructed for the Albuquerque Natural Gas Company, a subsidiary, will be about 300 miles in length at completion, and is said to be the first gas line to cross the Continental Divide. Construction was begun on the line last May and gas is to be available to the New Mexico towns around the 15th of September.

Although much table-land abounds in New Mexico, the route of the line passes through a section that is exceedingly rough, broken up with peaks, foothills, arroyos, ravines and canyons.

A scarcity of towns along the 150-mile stretch between Farmington and Albuquerque has made it necessary to haul pipe, provisions and water for considerable distances, as great as 59 miles in some instances.

Aztec, New Mexico, lying north and east, of Farm- *(Continued on Page 60)*

PACIFIC COAST GAS ASSOCIATION

447 Sutter Street, San Francisco, California
A Department Conducted by Clifford Johnstone, Managing Director

Nominating Committee Submits Report

THE Association's Nominating Committee reports that it will make the following nominations at the Annual Business Meeting to be held on September 9, at Pasadena:

For President: R. E. Fisher, vice-president, Pacific Gas and Electric Company;

For Vice-President: Jas. L. Stone, vice-president and general manager, Spokane Gas and Fuel Company;

For Treasurer: D. G. Martin, auditor, Pacific Gas and Electric Company;

For Directors: R. W. Miller, executive vice-president, Pacific Lighting Corporation; Geo. L. Myers, assistant to president, Portland Gas and Coke Company; E. L. Payne, general manager, Payne Furnace and Supply Company; Jas. F. Pollard, general manager, Seattle Gas Company.

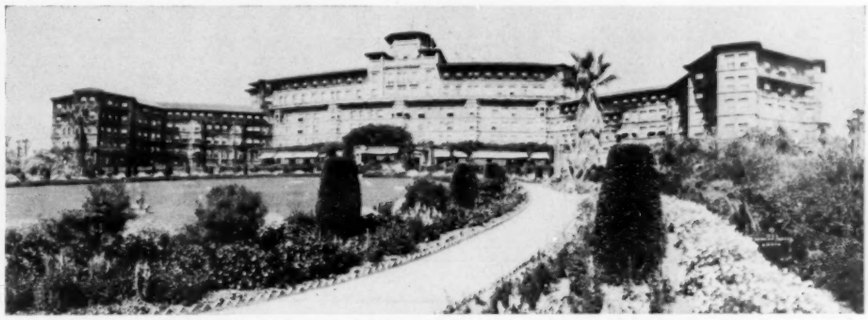
Industrial Publicity Campaign

COINCIDENT with the introduction of natural gas into many new West Coast communities, the Pacific Coast Gas Association has adopted an effective means of impressing upon the minds of industrial consumers the advantages and economies of the new fuel.

Under the direction of Elliott Taylor, San Francisco manager of *Western Gas,* an intensive trade paper publicity campaign is being conducted, in conjunction with the Association's paid advertising, and in nearly every field of possible gas application, publicity stories are written to illustrate how heating methods can be improved by the use of natural gas.

The stories themselves are comprehensive descriptions of actual installations, written and illustrated to appeal to the readers of the particular type of publication in question.

Publications in which stories have been placed include Western Canner & Packer, Western Plumbing & Heating Journal, Western Baker, Western Restaurant, Western Machinery World, Keeler's Pacific Coast Hotel Reporter, Pacific Dairy Review, and Pacific Coast Record.



37th Annual Convention to Have Ideal Setting

OFFICIAL headquarters for P. C. G. A. members from September 9 to 13, dates of the Association's 37th Annual Convention, will be the Hotel Huntington, shown in the illustration above. Hotel Huntington, one of the show places of Pasadena, with its spacious grounds, ideal guest accommodations, facilities for meetings and other convention activities, will leave nothing wanting in surroundings.

Those who are close to the committees in charge of arrangements for this year's meeting are prediciting freely that it will be the best convention in the history of the Association. The program will be as modern as the modern adaptation of gas for use in home and factory. Entertainment will be novel. Attendance prospects are excellent in all sections of Association territory, and many eastern states will also be represented. A year of keen activity in the industry and in Association enterprises is to be reviewed, lending unusual importance to the Pasadena convention.

53 Prizes Awarded to Successful Essay Writers

F. H. Holden, of the Southern California Gas Company, who has served as director of the essay contest conducted this year by the Associaton, reports a total of 1224 essays submitted by employees of member companies, in competition for the 53 prizes offered.

The 13 high place winners are announced below:

Rank	*Writer*	*Company*	*Prize*
1.	Elizabeth Lawton	L. A. Gas & Electric Corp.	$50
2.	Dora L. Lemrig	Washington G. & E. Co., Montesano	30
3.	Catherine Hagen	So. Counties Gas Co., Venice	20
4.	W. C. Smith	Washington G. & E. Co., Everett	10
5.	J. L. Dunlap	Portland Gas & Coke Co.	10
6.	Zona Frey	Spokane Gas & Fuel Co.	10
7.	H. J. Cheetham	Coast Counties G. & E. Co., Gilroy	10
8.	Edward L. Priest	P. G. & E. Co., Oakland	10
9.	Henry S. Harris	L. A. Gas & Elec. Corp.	10
10.	O. J. Kauffman	L. A. Gas & Elec. Corp.	10
11.	Ann C. Frosio	San Diego Cons. G. & E. Corp.	10
12.	Ernest W. Kimmell	P. G. & E. Co., Oakland	10
13.	Chas. B. Parker	L. A. Gas & Elec. Corp.	10

Five dollar awards went to each of the 40 essay writers named below:

Los Angeles Gas and Electric Corporation: Chas. J. Carter, M. W. Turner, C. A. Green, Oscar J. Grant, E. J. Evans, R. W. Gibson, Frank Washburn, R. S. Heflon, Carl Bergmann, Geo. E. Hughes, Chas. H. Whitehead, Mrs. Cora French, Margarite Seale, Earl L. Williams, Jessica B. Taylor, Albert S. Farley, John C. Enders, Harold L. Leathers, Mary Jarvis, John Orth, W. P. O'Rourke, M. F. Langeron, Mrs. E. A. Broughton.

Pacific Gas and Electric Company: Art Gledhill, L. Clyde Ferrari, Reuben Hollman, H. F. Larder (Monterey), Isola Cimolino (San Jose), Pearl H. Lindquist (Monterey).

Coast Counties Gas and Electric Company: Willis Williams (Santa Cruz), Jack Lindsay (Watsonville).

Southern Counties Gas Company: Floyd G. Hartley (Santa Monica), Sidney B. Gaynor (Los Angeles), Amy LaFuze (Pomona),

Southern California Gas Company: Joan Gartley.
Portland Gas & Coke Company: Archer O. Leech, D. E. Lutlechild.
Washington Gas & Electric Company: Mrs. J. B. Franklin.
Seattle Gas Company: Wm. Jennings.

Thirteen companies were represented in the contest, with the following number of essays:

Company	*No. of Essays*
Arizona Edison Co.	1
British Columbia Electric Power & Gas Co.	6
Coast Counties Gas & Electric Co.	48
Los Angeles Gas & Electric Corp.	693
Northwest Cities Gas Co.	5
Pacific Gas & Electric Co.	84
Portland Gas & Coke Co.	69
San Diego Consolidated Gas & Electric Co.	11
Seattle Lighting Co.	42
Southern California Gas Co.	39
Southern Counties Gas Co.	188
Spokane Gas & Fuel Co.	7
Washington Gas & Electric Co.	31
Total	1224

Amendments to Constitution and By-Laws

THE Board of Directors of the Pacific Coast Gas Association submits the following amendments to the Constitution and By-Laws of the Association. These amendments will be voted on at the Annual Business Meeting, September 9, at Pasadena.

CONSTITUTION

Article III (As at Present)

Section 2: Each Class A and each Class B member shall be entitled to appoint one accredited representative who may attend and cast one vote in general session, and who may attend executive sessions.

Suggested Revision

Section 2: Each Class A and each Class B member shall be entitled to appoint one accredited representative who may attend and cast one vote in general session.

Article IV (As at Present)

Title—"Officers."

Suggested Revision

Title—"Organization."

Section 5 *(New)*

Section 5: There shall be an Advisory Council consisting of the Chief Operating Executive of each Class A member company. This Council shall meet upon the call of the President of the Association. The function of this Council shall be to advise the Board of Directors on matters of policy and budgets, and membership thereon conveys no special voting or management privileges.

Note: In all instances where the title "Executive Secretary" was used, it will be changed to read "Managing Director."

BY-LAWS

Article II *(As at Present)*

Section 5: At the Annual Convention there shall be an executive session at which official representatives of Class A and Class B members may consult with the Board of Directors in an advisory capacity in regard to Association policies and budgets.

Suggested Revision

Section omitted.

Article IV *(As at Present)*

Section 1: The President shall preside at all general sessions of the Association and at all meetings of the Board of Directors. He shall, with the approval of the Board of Directors, appoint all committees and shall be an ex-officio member of all such committees. He shall have power to call meetings of the Board of Directors and shall have supervision over the office of the Executive Secretary.

Suggested Revision

Section 1: The President shall preside at all general sessions of the Association and at all meetings of the Board of Directors. He shall, with the approval of the Board of Directors, appoint all committees and shall be an ex-officio member of all such committees. He shall have power to call meetings of the Board of Directors and of the Advisory Council and shall have supervision over the office of the Association.

Article V *(As at Present)*

Section 2: General Committees shall be divided into four sections, i.e., Accounting, Commercial, Public Relations and Technical, and shall be subject to the direction of the President and the Board of Directors.

Suggested Revision

Section 2: General Committees shall be divided into five sections, i.e., Accounting, Commercial, Public Relations, Publicity and Advertising, and Technical, and shall be subject to the direction of the President and the Board of Directors.

New

The Publicity and Advertising Section shall have jurisdiction over all general publicity and such advertising as extends, by its nature, beyond the field covered by any one Committee: it shall have the power, with the consent of the Board of Directors, to initiate and carry out advertising and publicity plans, and it shall act as an advisor when plans originating in other sections are submitted to it, and if they are approved it shall lend its facilities to the execution of them.

As at Present

Section 3: There shall be six Special Committees regularly appointed, i.e., Nominating, Resolutions, Auditing, Awards, Papers and Reports, and Arrangements. Other special committees may be appointed if desirable.

Suggested Revision

Section 3: There shall be three Special Committees regularly appointed, i.e., Nominating, Resolutions and Awards. Other special committees may be appointed if desirable.

As at Present

Section 3 (Continued): The Auditing Committee shall consist of three members—one a Director, one a representative of a Class A member and one a representative of a Class B member. It shall audit or have audited, at least once each year, the accounts and records of the Treasurer and Executive Secretary.

The Papers and Reports Committee shall consist of two representatives of Class A members and one representative of a Class B member. It shall be furnished with copies of all papers, committee reports and recommendations prior to their general publication, and shall eliminate any statements or recommendations which it may deem objectionable or contrary to the best interests of the gas industry.

The Arrangements Committee shall consist of such members as the President may appoint. It shall have charge of the arrangements for all sectional meetings of the Association and for the Annual Convention. It shall initiate and conduct exhibits, entertainments and programs and do such other work as the President may direct.

Suggested Revision

Three above paragraphs omitted.

Note: In all instances where the title "Executive Secretary" was used, it will be changed to read "Managing Director."

Clayton Murdock Burns: The Radio Baby

BELOW is the first and exclusive photograph of Clayton Murdock Burns, the radio baby, sponsored by the Cooperative Advertising Committee.

A large number of prints of this photograph have been made and mailed in

response to requests from the radio audience. This offer was first broadcast by Helen Webster on June 11, and in the two weeks immediately following, some 800 requests for the photograph were received. These requests originated as far north as Victoria, British Columbia, and as far south as Tijuana, thus showing the wide-spread enthusiasm in the radio program being broadcast by our Advertising Committee.

A portion of the 130 delegates who attended the Pacific Coast Gas Association's Northern Regional Conference at Seattle, June 26-27

AWARDS BY SO. COUNTIES CO. IN P.C.G.A. CONTESTS

The July sales meeting of Southern Counties Gas Company held at company headquarters in Los Angeles, was featured by the "finals" in the company's Three-Minute Speaking Contest for the purpose of selecting the company entries in the coast-wide oratorical contests to be conducted at the annual convention of the Pacific Coast Gas Association to be held at Pasadena, Sept. 9-13, 1930.

Twelve speakers, four women and eight men, competed for the prizes offered by the company and for the honor of representing the organization at the convention.

The first prize of $15 in the women's division went to Mary Kinerk of Ocean Park, and second price of $10 to Cleo McGuire of Monrovia. In the men's contest, Theo J. Goon of Monrovia, won the first prize of $15, and the second prize was awarded to Harry Swanson of Ocean Park.

Announcement was also made at this meeting of the winners in the company's essay contest as follows: First, J. H. Tolle of Monrovia; second, Walter J. Ferris of Santa Ana. Honorable mention was given to the following: Mrs. Laura J. Pullman, and Sydney Gaynor, both of the general office; and Katherine G. Hagan of Venice.

SACRAMENTO AND STOCKTON NOW USING "NATURAL"

The change-over to natural gas service at Sacramento, Calif., was begun on July 7, by Pacific Gas and Electric Company, headquartered at San Francisco.

Stockton's system was changed over during the week of July 14, and both cities are now being supplied with natural. Both cities are on the Pacific Gas and Electric Company's 16-inch extension from the Standard-Pacific gas line from Kettleman Hills to Richmond. The extension joins the Stanpac line at Vernalis Junction.

SURVEYS IN PROGRESS ON LINE TO SERVE ARIZONA CENTERS

Preliminary surveys on the project to bring natural gas from New Mexico fields to Arizona mining centers have been started, by Western Gas Company, and according to late reports have been completed as far as Lordsburg, New Mexico. Engineers are now working out the difficult problem of mapping a suitable crossing over the Franklin Mountains which border El Paso on the north and west.

The line will originate in Jal County, and the first unit will take it to Douglas, Arizona, serving also Bisbee, Morenci and Clifton.

John H. Shaffer of Smith Bros., contractors of Dallas, Texas, is chief of the surveying party. Mr. Shaffer also supervised a preliminary survey for the present line to El Paso, constructed by El Paso Natural Gas Company.

F. F. Doyle *to* Manage *the* "Stanpac" Line

Fred F. Doyle

Fred F. Doyle, manager of the Natural Gas Division of the Pacific Gas and Electric Company of San Francisco, Cal., has recently been assigned to the management of the Standard Pacific Gas Line, jointly owned by P. G. and E. and the Standard Oil Company. The line is being put into operation, and extends from the Kettleman Hills district in central California, northward 200 miles, serving many communities en route. Mr. Doyle also has active supervision of the Pacific Gas and Electric Company's line to Milpitas, Oakland, and San Francisco.

Prior to his association with the P. G. and E., Mr. Doyle was with the Midway Gas Company as superintendent of the San Joaquin Division.

SEATTLE GAS CO. NOW MEMBER OF NATIONAL SAFETY COUNCIL

Seattle Gas Company, 1308 Fourth Avenue, Seattle, Wash., has become a member of the Public Utilities Section of the National Safety Council. James F. Pollard is general manager for the company.

NATURAL GAS BUREAU INVITES ARCHITECTS TO MEETING

Invitations have been extended to 130 architects to attend a dinner at the Natural Gas Bureau, 815 East Washington St., Los Angeles, Calif., on July 31, at 6:30 p.m. This number represents the first group of architects to be invited to inspect the latest gas equipment for steam, hot water and hot air heating installation, as well as the large commercial units for cooking and gas-fired refrigeration. The entire architectural profession of southern California eventually will be invited to attend similar dinner meetings.

The Natural Gas Bureau is a cooperative sales activity of Southern Counties Gas Company, Los Angeles Gas and Electric Corporation, and Southern California Gas Company, all headquartered at Los Angeles.

J. Lyle Vance, director of the Bureau, will act as host on each occasion, and following the dinner, will explain the operation of the various gas-fired appliances.

DALLAS, ORE., GIVES FRANCHISE TO PORTLAND GAS AND COKE

Dallas, Oregon, has granted a gas franchise to the Portland Gas and Coke Company of Portland, Oregon. Gas will be supplied from the Salem extension.

Portland Gas and Coke Company also has applied to the city of Newberg, Oregon, for a permit to serve gas in that town. Gas would be supplied from a line to McMinnville.

WHITE RIVER VALLEY SYSTEM OF WASHINGTON G. & E. EXTENDED

Washington Gas and Electric Co.'s White River Valley system is being extended to Auburn, Wash., work having begun on July 7. A total of 43 miles of pipe is being laid to complete the project, including distribution mains. Headquarters for the company are at Tacoma.

RIVERDALE, CAL., CONSUMERS NOW USING NATURAL GAS

Service of natural gas has been started in Riverdale Cooperative Creamery was con- Southern California Gas Company, which has headquarters in Los Angeles. The Riverdale Cooperative Creamery was converted to "natural" early in July.

First Chicago Line Contracts Let

CONTINENTAL Construction Company of Kansas City has awarded the first contracts on the 1,000-mile, 24-inch natural gas pipe line to be constructed from the Texas Panhandle to Chicago, to Sheehan Brothers, Tulsa, Bechtel & Kaiser, San Francisco, Ford Bacon & Davis, Inc., New York; and Smith Brothers, Inc., Dallas.

Cities Service Gas Company, the Insull interests, Southwestern Development Company, Standard Oil of New Jersey, the Texas Company, Skelly Oil Company, Phillips Petroleum Company and Columbian Carbon Company, are the interests for whom the line will be constructed, with the Continental Construction Company, formed by this group, having charge of the actual construction. These companies have a supply of gas available to the line, according to report, in excess of seven trillion cubic feet.

More than 50 cities and communities will be supplied from the line which will originate in Moore County, Texas. From this point it will extend north through the Oklahoma Panhandle to a point near Meade, Kansas, and thence in a northeasterly direction across Kansas, through Washington County to Platsmouth, Nebraska. At this point the line will cross the Missouri River, thence across Iowa in an easterly, northeasterly direction, to cross the Mississippi River near Muscatine and on east through Illinois, to a point south of Chicago where a connection will be made with the Insull system serving that city. It is also proposed to extend the line to other markets.

All rights-of-way along the highway and across privately owned property have been secured. The line is to be buried a distance of three feet or more below the surface, or below the cultivation line, so that it will offer no interference to the cultivation of the farm land through which it passes.

Application has been made by the Continental Construction Corp., of Kansas City, before the Kansas Public Service Commission, for authority to construct the line across the state.

The carrier is to be a combination coupled and welded one, with the S. R. Dresser Manufacturing Co. having been awarded the contract for the couplings. Worthington Pump and Machinery Corp., has received the order for the initial compressor equipment for the line. Compressor facilities totaling 57,000 h.p. are going in on the line by the end of this year.

About half of the telephone line to be used had been contracted, July 1, and engineers were engaged in deciding contract awards for the construction of the south half of the pipeline amounting to about 500 miles.

HARLOW TRANSFERRED TO UNION PUBLIC SERVICE COMPANY

George M. Harlow of the new business department of the Bartlesville Gas & Electric Company, Bartlesville, Okla., has been transferred to the new business department of the Union Public Service Company at Fort Scott, Kan.

NORTHWEST CITIES GAS CO. IN LINE EXTENSION

Northwest Cities Gas Company of Walla Walla, Washington, is extending its system from Eugene, Oregon, to a point about 2 miles south of Springfield, Oregon.

Saskatchewan Lines *in* Prospect

THREE companies are asking franchises in Regina and Moosejaw in Saskatchewan, Canada, and two of them are asking also for the Saskatoon franchise, according to late reports in the Canadian press.

Northern Utilities Company has asked for three separate franchises in these towns, and plans construction of a line from the Dead Horse Coulee field on the international boundary or from the Wainwright field 160 miles north of Bark, Alberta, to these communities. There is a possibility that the line might be constructed from Turner Valley or Foremost fields in Alberta. The line, if constructed from the latter named point, would be approximately 300 miles long, and would cost about $10,000,000. Booster stations would be constructed in the vicinity of Moosejaw or Swift Current, according to the report.

C. O. Moore is president of the Northern Utilities Company, E. C. Moore is construction engineer, and Leo Jolley is house heating engineer.

The second company named as being interested in the three franchises is the Dominion Gas and Electric Corp., of which C. J. Yorath is president. This company is said to plan construction of a line from Turner Valley to Regina and Moosejaw, with additional facilities to serve Saskatoon. The company is applying for all three of the franchises. Dominion Gas and Electric is purchasing the Canadian subsidiaries of International Utilities.

Eagle Butte Oil Company, according to the reports, is applying in Regina and Moosejaw, and plans to take a line 290 miles from Cypress Hills field, in which the company owns extensive holdings. C. E. Roth is named as requesting franchises in the company's name.

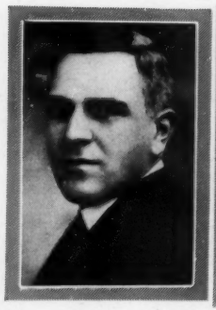
No action has as yet been taken on any of the applications.

BYLLESBY PUBLICITY HEAD ON WEST COAST

Joseph W. Hicks, publicity director for the Byllesby Engineering and Management Corporation, and of Standard Gas and Electric Company, was a visitor on the Pacific Coast during the last of June and the first of July. While in San Francisco he attended the annual convention of the National Electric Light Association. Mr. Hicks visited Byllesby properties in the Northwest, also at San Diego, and returned to company headquarters in Chicago, via Oklahoma where his company has other holdings.

UNDERRINER SALESMANAGER FOR FORNEY COMBUSTION CO.

R. H. Forney, president of the Forney Combustion Company of Dallas, has announced the appointment of C. F. Underriner as sales manager of the combustion company which maintains headquarters in the Thomas Building.



Clifford E. Paige

R. W. Gallagher

A. G. A. Heads Nominated *for* New Administration

THE Nominating Committee of the American Gas Association will present the following names for election at the 13th Annual Convention of that organization in Atlantic City, N. J., October 13-17:

President—Clifford E. Paige, vice-president, Brooklyn Union Gas Co., Brooklyn, N. Y.

Vice-President—R. W. Gallagher, president, East Ohio Gas Co., Cleveland, Ohio.

Treasurer—W. J. Welsh, president, New York and Richmond Gas Co., Staten Island, N. Y.

Directors—Two-Year terms: Walter C. Beckjord, vice-president, Boston Consolidated Gas Co., Boston, Mass.; J. D. Creveling, associate manager natural gas and gasoline division, Henry L. Doherty & Co., New York, N. Y.; Raymond Cross, president, The Ohio Fuel Gas Co., Columbus, Ohio; Henry L. Doherty, president, Cities Service Co., New York, N. Y.; Oscar H. Fogg, vice-president, Consolidated Gas Company of New York, N. Y.; Samuel Insull, Jr., president, Midland United Co., Chicago, Ill.; F. A. Lemke, secretary and treasurer, Humphrey Company, Kalamazoo, Mich; A. E. Peirce, president, Central Public Service Corp., Chicago, Ill.; and Arthur Stockstrom, secretary, American Stove Co., St. Louis, Mo.

The following members have been nominated by section nominating committee to serve as section officers for the next association year:

Accounting Section: Chairman, John I. Blanchfield, Brooklyn Union Gas Co., Brooklyn, N. Y.; vice-chairman, Wm. A. Doering, Boston Consolidated Gas Co., Boston, Mass.

Commercial Section: Chairman, E. R. Acker, Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y.; vice-chairman, Samuel Insull, Jr., Midland United Co., Chicago, Ill.

Industrial Gas Section: Chairman D. W. Chapman, Peoples Gas Light & Coke Co., Chicago, Ill.; vice-chairman A. J. Peters, Consolidated Gas Company of New York, New York.

Manufacturers Section: Chairman, E. S. Dickey, Maryland Meter Works, Baltimore, Md.; vice-chairman, David B. Kahn, Estate Stove Co., Hamilton, Ohio.

Publicity and Advertising Section: Chairman, Donald M. Mackie, Commonwealth & Southern Corp., Jackson, Mich.; vice-chairman, R. E. Haas, Columbus Gas & Electric Corp., New York, N. Y.

Technical Section: Chairman, R. G. Griswold, Cities Service Co., New York, N. Y.; vice-chairman, I. K. Peck, Midland United Co., Chicago, Ill.

Imperial Valley Towns *to* Get Butane Service

DISTRIBUTION of liquefied natural gas in Brawley and Calexico, Calif., adjoining the El Centro territory of the Inland Empire Gas Company, will be started not later than September 1, it has been announced by R. E. Aitcheson, executive vice-president of the Natural Gas Corporation of California, an affiliated company of the Inland Empire Gas Company, both Standard Oil Company of California subsidiaries.

Brawley and Calexico are the first towns to be put on butane service by this company, which has been organized to distribute liquefied natural gas in many California communities.

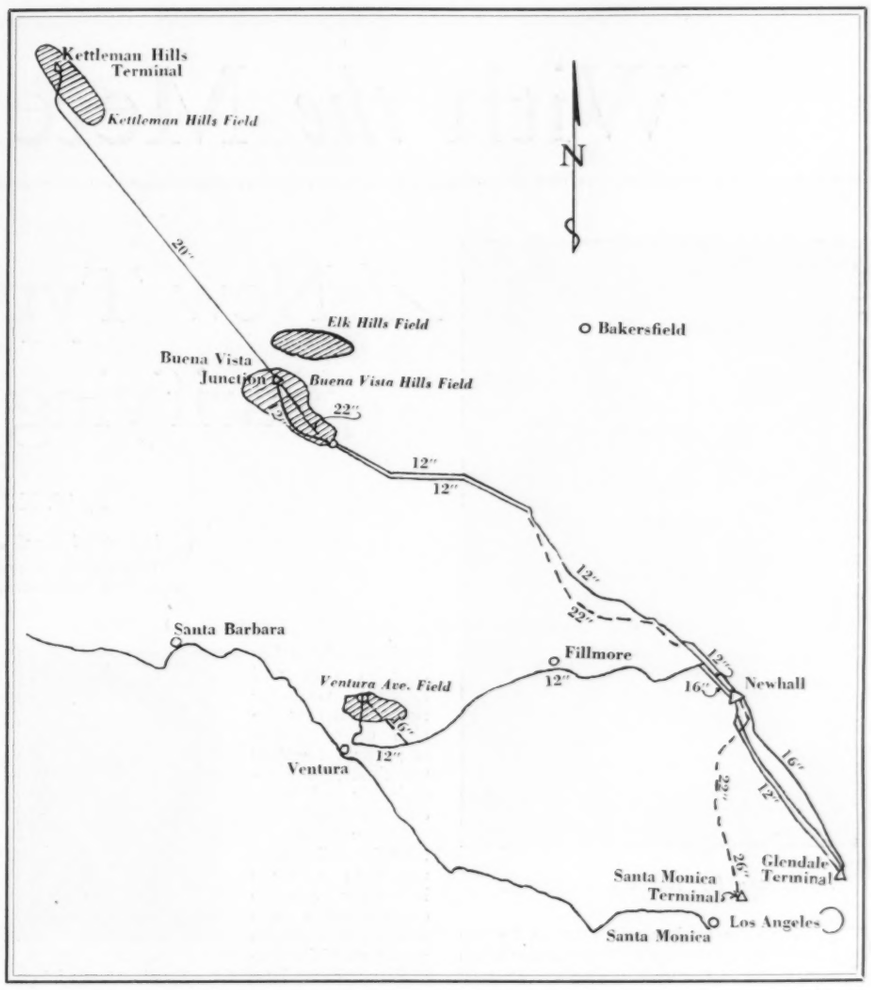
The distribution systems of the two towns are now about 90 per cent complete. In Brawley, more than 1,000 new consumers have been signed up and 500 have been signed in Calexico.

Construction work has been started on the two plants and while these will be completed before September 1, the delay in beginning gas distribution is due to necessity for awaiting the arrival of storage tanks which are in process of manufacture and must be shipped. These are not expected to be on hand before the middle of August.

In both communities extensive merchandising campaigns are already under way.

Mr. Aitcheson also has announced that as soon as the systems are complete and the plants are in operation in Brawley and Calexico, systems will be installed in the nearby communities of Calapatria, Holtville and Indio, where franchises already have been secured.

In all points, tank gas is to be served from the plants to the residents of rural districts where it is impossible to build distribution systems. This plan is already being carried out successfully in the vicinity of El Centro and its development is looked upon as a profitable addition to the liquefied natural gas service of other communiites.



Dotted lines indicate new construction to be completed for Southern California Gas Company by December 1, 1930. The Newhall and Santa Monica terminals, as well as a field compressor station at Buena Vista Hills, are included in the new construction—*Sketch courtesy of R. M. Bauer*

So. Calif. Line Program Launched

CONSTRUCTION operations called for in Southern California Gas Company's $6,000,000 program to increase gas delivery facilities to the Los Angeles metropolitan area from San Joaquin Valley fields, began on July 10 from the Santa Monica Terminal end of the project. Work on the 26-inch line is going forward rapidly, and the 26- and 22-inch sector to Newhall will be complete by September 5, according to present schedule. Work will commence on the 40-mile section of 22-inch line to be laid over the Tehachapi Mountains on August 15.

The map above indicates the points where construction is under way on the company's transmission system, together with line sizes of the several sections. Total delivery capacity of the San Joaquin-Los Angeles area system, on completion in the fall of 1931, will be 150,000,000 cubic feet daily.

SOUTHWESTERN NATURAL BEGINS 112-MILE LINE IN OKLAHOMA

Announcement is made of the beginning of construction of the Southwestern Natural Gas Company's 112-mile gas line from the Quinton, Oklahoma, gas fields to Muskogee, Sapulpa, and Boynton in eastern Oklahoma.

Southwestern Natural is a subsidiary of the Appalachian Gas Corporation, and holds long term contracts to supply gas to distributing companies in these towns. The company will also supply gas through the line, to certain inudstrial consumers at Tulsa, Oklahoma.

According to Harry Mann, vice-president of the company, four crews are now at work on the line, one each on the Tulsa and Quinton ends of the line, and two crews on river crossings. The line will extend north and east from the Quinton field to Checotah. Here the line branches, one unit going northwest to Muskogee, and the other extending northeast to a point near Boynton and on to Sapulpa and Tulsa.

The entire project is expected to be completed around October 1. The Muskogee branch will be completed around September 1.

F. G. HAINES OF PORTLAND GAS & COKE CO., DIES

Announcement has been made of the death on July 6, of Frederick Guy Haines, supervisor of the contract bureau for Portland Gas & Coke Company, Portland, Oregon.

ASK TO SERVE KINGMAN; GAS PLANT CONSTRUCTION PLANNED

Commercial Gas Company, Ltd., with headquarters in Los Angeles, Calif., has applied for the franchise to serve Kingman, Arizona, with gas. If the franchise is granted, the company plans construction of a $50,000 manufactured gas plant.

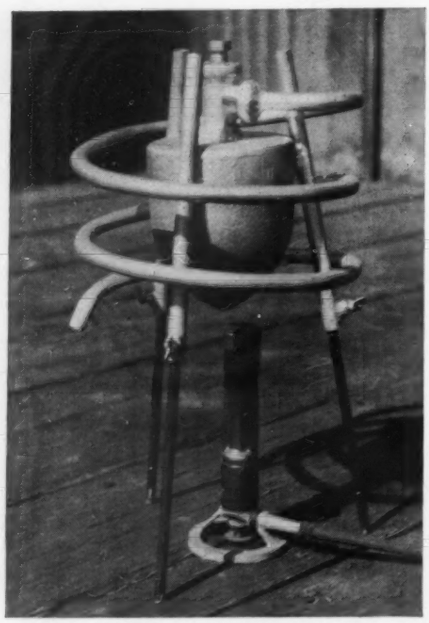
J. F. Langston is president of the company and J. F. Beals is vice-president. Both men have been making a canvass of homes and business establishments in Kingman, to determine the approximate amount of potential load.

A. H. SIKES AND O. W. BOCKELOH EXCHANGE MANAGERSHIPS

Announcement has been made of the transfer of A. H. Sikes from the position of manager of the Great Falls Gas Company. Mr. Sikes has been appointed manager of the Great Northern Gas Company, Ltd., at Sault Ste. Marie, Ontario, Canada. Both companies are subsidiaries to the North Continent Utilities Corp.

O. W. Bockeloh, formerly manager of the Great Northern Gas Company at Sault Ste. Marie, takes Mr. Sikes place as manager of the Great Falls Gas Company.

With *the* Metermen



Apparatus for mercury distillation

A New Type *of* Still *for* Purifying Mercury

By T. K. M. SMITH

*Industrial Fuel Supply Company**
Chairman, Standards Committee,
Southern California Meter Association

ONE of the projects undertaken by the Southern California Meter Association Standards Committee during the past year has been an investigation into practical types of distillation equipment for mercury purification. It is the purpose of this paper to describe a mercury still recently developed by H. E. Thompson, combustion engineer of the Los Angeles Gas and Electric Corporation. This new design of apparatus is proving very practical in the reclaiming of mercury by distillation.

Mercury when used in differential recording gauges is readily subject to contamination unless some means are provided to prevent foreign matter, etc., from entering the recording instrument. Through contact with water, oil, emulsion, copper and zinc—the last two named from brass fittings—the accuracy of the record made by the differential pen on the chart generally becomes impaired and the resulting error may be either high or low.

T. K. M. Smith

Mercury contamination can be corrected as follows, in the case of:

Dirty water and surface scum: By filtering the mercury through a finely woven cloth, chamois skin, or pin hole in a filter paper.

Clean water: By evaporation, heating the mercury to 220°-230° F.

Oil and emulsion: By washing the mercury with a high test gasoline, and drying it.

Copper and Zinc: By distillation, followed by a nitric acid wash. The distillation can also be followed by a violent agitation with air for about 24 hours, and then filtering off the oxide or scum.

To merely pass the mercury through an acid tower or bath will not entirely free it from its undesirable properties, and to produce mercury free from impurities, the distillation method has been the surest and most satisfactory.

The still illustrated with this paper is not entirely new in principle, yet it embodies certain features that make it of unusual interest. It will be noted that this design of still is air cooled and remarkably compact. It also reduces to a minimum the possibility of mercury vapors escaping. In its construction a 4-inch bull plug with a plate welded over the open end has been used. Into the top plate a hole is drilled, over which a ¼-inch tee is welded. For the air condenser, approximately 8 feet of ¼-inch pipe is coiled around the bull plug in a 10-inch diameter, with 3-inch spacings between the coils, the pitch of the condenser being about 1-inch per foot.

The coil or condenser is welded into the side outlet of the tee. The legs are made of ¼-inch pipe and are designed with adjustable extensions about 8 inches in length. This feature offers a rapid and convenient method of height adjustment to take care of various sizes or heights of burners and receivers for clean mercury. Due to the adjustable legs the still requires minimum storage space when it is not in use.

*Presented before the Southern California Meter Association, June 26, 1930.

Start *of* New Year *for* S. C. M. A.

PASSING the gavel to B. G. Williams, newly elected president of the Southern California Meter Association, R. F. Angell closed his administration at the July 24 monthly meeting of the organization, which convened at the Breakers Hotel, Long Beach.

In his introductory message President Williams recalled the founding of the Association, and called upon T. K. M. Smith, first president, and B. M. Laulhere, president during the second year, for brief remarks.

As a tribute to the efficient work of G. S. Duncan, secretary of the Association during the past year, the Association presented him with a pen and pencil desk set at the July meeting.

With P. W. Hill, program chairman for the coming year, presiding over the speaking and discussion program, two papers were read—the first by N. C. Wells of The Texas Company, on "Gasoline Plant Metering," and the second by D. A. Stocks, Richfield Oil Company, on "Field Service and Maintenance of Orifice Meters". Following each paper was a general discussion taken part in by many of those present.

A feature of the July meeting was the presentation of several "gadgets", described by R. F. Angell in the absence of C. W. Brockman, chairman of the Gadgets Club. Another gadget competition is under way, and prize awards will be made shortly, as soon as 12 entries are in the hands of the committee.

METER ASSOCIATION HEADS REVIEW YEAR'S WORK

Incoming and outgoing officers and committeemen of the Southern California Meter Association met in a combined dinner and business session on the evening of July 9. The meeting, called by R. F. Angell, retiring president, was for the purpose of hearing reports from outgoing chairmen of committees and discussing plans for Association projects in the year ahead.

A maximum of about 15 pounds of mercury can easily be handled with this size apparatus; the rate of distillation depends, of course, upon the amount of heat applied to the still; the boiling point of mercury is 674.6°F. at sea level.

It is best to measure the amount of dirty mercury put into the still volumetrically, as it will aid in determining the amount of clean mercury which should be carried over, leaving the impure portion remaining in the retort. This will act as a safeguard against spoiling a batch of purified mercury.

Filling the retort is done through the top opening in the ¼-inch tee and the only connection which affords the possibility of any escaping uncondensed mercury vapors is at this point. Such leakage is impossible if precaution is taken to screw the ¼-inch plug in this opening securely.

To prevent heat radiating from the flame, or the retort, to the condensing tube and thus reducing the latter's efficiency, a sheet of insulating material may be placed between the retort and the condenser. However, numerous tests have shown that this is not necessary in practical operation.

In connection with this new design of mercury still a word should be said regarding the mercury vapor hazard, which is reduced well below the danger point through this method.

The temperature of the clean mercury leaving the outlet of the condenser of this apparatus is about 80 to 90 degrees Fahrenheit, or average room temperature.

Mercury vapor tension tables show the following pressures to exist at the indicated temperatures:

Mercury Vapor Tension:

At 32°F. .0004 millimeters
At 68°F. .0013 millimeters
At 104°F. .006 millimeters
At 140°F. .03 millimeters

In a well ventilated room these vapor concentrations may be regarded as insignificant.

PHILFUELS PUTS FOUR BUTANE PLANTS IN OPERATION

Philfuels Company, with headquarters in Detroit, Mich., reports that four new butane plants have been put into operation during the past month. Two of the plants, one at Sheldon, Iowa, a property of Central West Public Service Company, and the other at Clinton, Mo., owned by the Missouri Public Service Company, have been converted to butane from carbureted water gas. The other two, one in Clarinda, Iowa, owned by Central States Electric Company, and one at Chaldron, Neb., a property of the Chaldron Gas Company, are new installations.

McMAHON GOES TO FOXBORO, MASS., LANE TO TULSA

J. B. McMahon, manager of the Tulsa branch of the Foxboro Company, will hereafter make his headquarters at the home office at Foxboro, Mass. He is to take charge of all field engineering service and will be responsible for all direct sales. G. B. Lane, former manager of the Detroit office, has succeeded Mr. McMahon as branch manager at Tulsa.

NEW BUILDING UNDER WAY FOR OIL EQUIPMENT EXPOSITION

Construction work is in progress on the new exposition hall for the Oil Equipment and Engineering Exposition, held annually in Los Angeles, Calif. The new building is located in Compton, 10 miles south of the city, and will be ready for the next exposition, which is scheduled to open May 16, 1931.

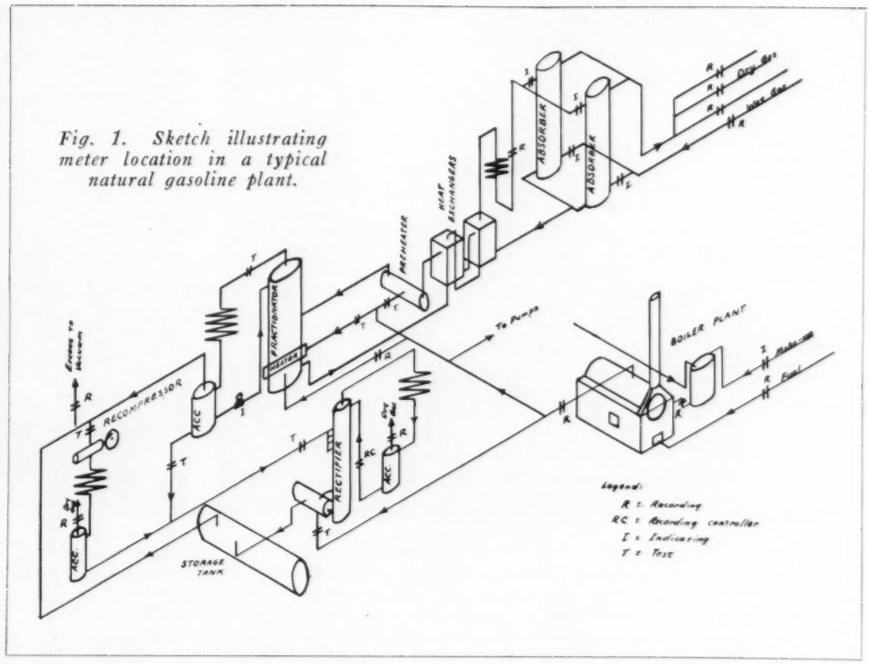


Fig. 1. Sketch illustrating meter location in a typical natural gasoline plant.

Gasoline Plant Metering

By N. C. WELLS
*The Texas Company**

GASOLINE plant operators are indeed fortunate in possessing a method of metering the various fluids that combines the elements of accuracy, sensitivity, rugged construction and simplicity with regard to the installation in the fluid carrying lines. Simplicity and rugged construction are essential in any installation attached to high pressure lines. The fact that orifice meters can combine these two qualities without any sacrifice in sensitivity or accuracy makes them highly desirable for the measurement of nearly all fluids in the gasoline plant. The recording attachment, of course, lends value to the meters.

Modern installations leave little to be desired when properly set up. Service conditions will affect the type of installation materially. A general rule for all gasoline plant installations would be to allow for as much variation in flow rates as possible within reasonable limits—in other words, to make the meter barrels amply large.

Particular care should be exercised in the case of important main lines, that is lines, which if put out of commission even for a short time would seriously affect plant operation. For example, in the case of metering the steam through the main steam line the installation should be made extremely rugged and permanent. It is not desirable to use flanged connections with a by-pass on high pressure steam lines for the following reasons:

1. Three valves are required. This adds three sources of leaks and trouble and, therefore, three possibilities of a plant shutdown.

2. There is a certain hazard involved in opening a pair of flanges to change the plate, in that the position of the man working on it is directly in line with the opening.

In this type of installation the orifice fitting should be simple and safe to work on, and above all, rugged.

Most of the metering that is done in a gasoline plant is of such a nature that its value can be definitely determined. Fortunately for the engineer, it is seldom necessary to establish the value of meter installations. They are a necessity concerning which there can be little argument.

Fig. 1 illustrates the location of meters in a typical gasoline plant. Different types of meters are used, depending on the service required. The double lines indicate the point of metering in the fluid lines. Where volumes are required continually, recording meters are installed. Where they are required periodically, indicating meters are installed. At some points where only snap readings or test readings are required, orifice plates are installed and manometers or recording meters used during the period of the required reading and then removed.

At certain points the variation is important. The volume may not be important at all, but a recording meter is installed merely to indicate the variation roughly.

The sketch (Fig. 1) is designed principally to emphasize the various points of metering as applied to plant control and operation. It represents only one of many types of plants.

Water circulation, when centrifugal pumps are used, is often measured periodically by running a pitot tube traverse. This would apply to water over the cooling tower, jacket water for engines and compressors, etc.

Some average data secured by the use of

* Presented before the Southern California Meter Association, July 24, 1930.

orifice meter measurements are recorded in Table No. 1 to show the accuracy involved. This degree of accuracy was secured without any particular effort.

TABLE NO. 1

Rectifier Operation

Feed (metered)	12,448 gal. per hr.
Product (metered)	11,637
Feed minus product	811 gal. per hr.
Overhead (metered)	781 gal. per hr.
	30 gal. per hr., or 3.85% of metered overhead and 0.26% of the metered product.
Product (metered)	11,637 gal. per hr.
Product (gaged)	11,589
Difference	48 gal. per hr., or 0.41%
Product (metered)	3,880 gal. per hr.
Product (gaged)	3,908
Difference	28 gal. per hr., or 0.72%

Overhead, % of feed	Test 1	Test 2
from metered value	6.5	19.8
from gaged value	6.9	19.3
from metered overhead	6.3	21.4
from analysis	6.0	22.4

Steam Measurements

Based on saturated steam.

Rates varying from 1300 to 8600 gallons per day of agitation steam.

Twenty tests, metering steam to still with an orifice meter and the condensed water out at two points with displacement meters.

Maximum difference	8.8%
Minimum difference	0.26%
Average difference	2.75%

The New Foxboro Differential Limit Controller

THE Foxboro Company of Foxboro, Mass., has produced a new instrument called a differential limit recorder-controller. This controller is designed to meter flow that is varying over so wide a range that a wide range meter will not allow satisfactory readings.

The differential limit controller continually gives a record of the gas flow through the line. This controller is known as the primary meter (Fig. 2). It is specified to handle the minimum rate of flow with commercial accuracy. When the differential range is exceeded, the control functions and automatically opens a valve which puts the secondary meter in operation. This secondary meter is a complete Foxboro gas flow meter operating in the by-pass. When the secondary meter goes into operation it doubles the effective capacity of the set-up.

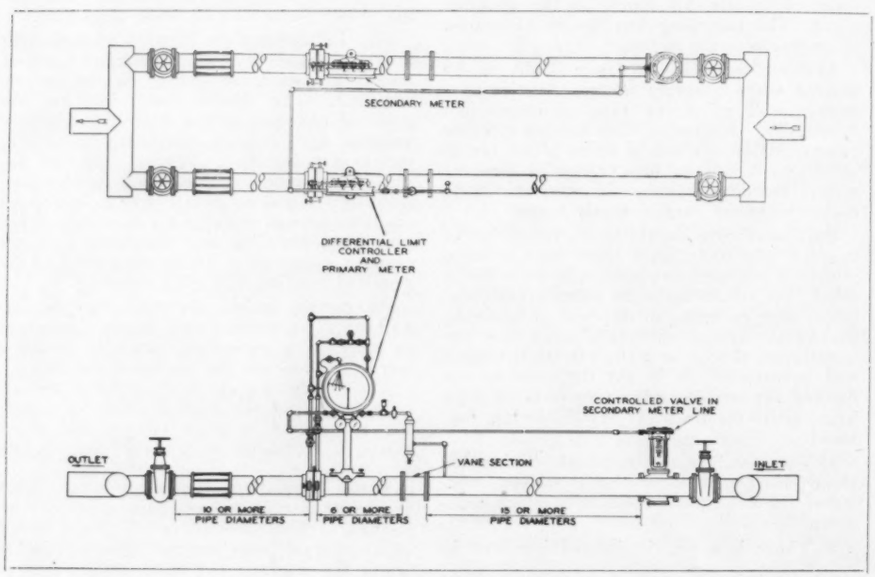


Fig. 1

As soon as the secondary meter line is open the differential pressure drops, because of the increased capacity. The valve in the secondary meter line is held open by the controller until the flow is again within the capacity of the primary meter. The valve is then closed automatically and the primary meter again assumes the entire load. The operation is entirely automatic.

Positive and flexible control is obtained by the fact that the points, at which the secondary meter is to be cut in and out of

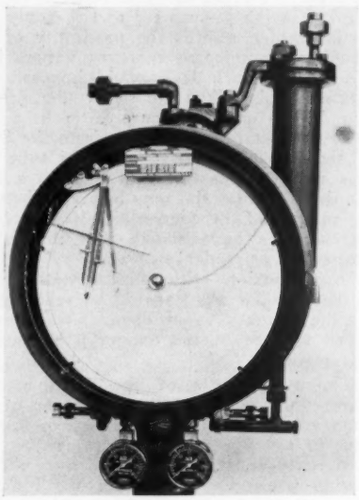


Fig. 2

the line, can be set at will. Positive action and tight closing of the controlled valve are insured by having it operated by the gas line pressure or an auxiliary air supply of 15 pounds per square inch.

Single meters or wide-range meters or more than one by-pass may be installed in various combinations with the new differential limit controller, to meet all cases of varying flow.

PORTLAND UTILITY TO SERVE CORVALLIS; LINE BUILDING

The gas franchise applied for at Corvallis, Oregon, has been granted to the Portland Gas and Coke Company of Portland, Oregon. Crews are already at work on the company's extension to Corvallis, Albany, Monmouth and Independence. It is estimated that gas supply will be available in these town in the early fall months.

Construction work on the company's line to Silverton from Gervais was expected to be complete about July 20. This branch line was brought through Mt. Angel from the main line to Salem.

LIQUEFIED NATURAL GAS TO BE AVAILABLE IN CANADA

Imperial Oil Co., Ltd., of Alberta, Canada, has authorized construction of an addition to its Calgary refinery for the purpose of making liquefied natural gas from Turner Valley. The new product will be shipped to points in the Dominion which are not reached by the gas mains.

GLENN MITCHELL HAS CHARGE OF METERING FOR NEW C. S. DISTRICT

Glenn Mitchell has been placed in charge of the meter work of the Cities Service Gas Company in the Springfield, Missouri, district. He was formerly meter inspector for the company at Ottawa, Kansas.

LEFT: *Air view of Arkansas Natural Gas Corporation meter station, showing 21 separate meter runs, spaced 4 feet apart.*
RIGHT: *Interior of meter house. House is 96 feet long by 20 feet wide.*

Largest Orifice Meter Station *in* Service *for* Arkansas Natural Gas Corporation

By W. R. McLAUGHLIN
Superintendent of Measurement
Arkansas Natural Gas Corporation
Shreveport, Louisiana

THE Arkansas Natural Gas Corporation constructed 137 miles of 20-inch pipe line from the Monroe and Richland Fields in Louisiana, the world's second largest gas field, to Waskom, Texas, with the 20-inch line tieing into other mains to Little Rock and Shreveport as they intersected.

This line was laid to satisfy contracts between the Arkansas Natural Gas Corporation, the buyer, and seven producing companies in the above mentioned area, and to found a more substantial background for supplying this fast growing territory.

W. R. McLaughlin

In conjunction with this line, a gas compressor station was constructed, with an ultimate capacity of 16,000 horse power.

The seven producing companies entered into agreements to deliver a certain per cent of the gross amount delivered each day, and to deliver same at a specified point. It was expected to handle 185,000,000 cubic feet per day to be delivered at a minimum pressure of 200 pounds gage. The gas delivered had to be measured, and a very complicated situation arose in regard to the number of meter installations to be built. In regard to a few of the deliveries, the gas was to be measured as many as four times to satisfy the contracts, as the buyers' contracts were not directly with the producer, and in other cases one pipe line to the meter station transported gas for as many as three different contracts.

As each party had his own idea in building a meter station, as to construction, material, metering equipment and housing facilities, and as each one was more or less interested in all the others due to each company delivering a certain per cent of all gas delivered, naturally the situation was complicated further.

The Arkansas Natural Gas Corporation submitted a plan to all the interested companies for handling the measurement problem, and it was agreed by all that the entire meter station would be built at one point with identical material and uniform construction, with all metering equipment in one house. The station was to be erected by the Arkansas Natural Gas Corporation, with each interested company sharing its part of the cost. Westcott orifice meters with flange connections were agreed upon as the type of metering equipment. This made necessary two complete sets of meters, as the buying company intended using check meters in all instances. That is, the prior meters were those of the selling company and the secondary meters those of the purchasing company. In the case where the gas was to be accounted for, four different times, the first two companies accept the measurement of the prior meter with the meter belonging to the party responsible for the initial delivery. The remaining two companies accept the measurements from the sceondary meter with the meter belonging to the final purchasing company. The two companies accepting the other two companies' measurements have the right to install their own recording differential and static gages on the same flanges as the ones now in use, making two sets of recording instruments to each flange, with the right to examine orifice plates jointly and make tests jointly.

These arrangements brought about the possibility of the largest metering installation, measuring gas into one pipe line system, in the world today.

The entire installation is 30-inch, to the top of the meter run, above ground and has 100 feet of straight run of pipe, including meter flanges, between inlet and outlet gates and is supported by four concrete piers approximately 33 feet apart, with all runs strapped to the piers.

The gas is transported to the station through five lines, i. e., one 20-inch, one 14-inch and three 6-inch, and is passed through vertical liquid scrubbers before going to the regulators. In most cases, the feeder lines approach the installation on a 22½° riser, but in other cases where regulators are set within 50 feet of the inlet gate, the runs approach the inlet gate on the same level.

The setting is divided into 21 separate meter runs four feet apart, i. e., three 12-inch, ten 8-inch and eight 6-inch.

The prior meters have 40 feet of straight pipe between the inlet gate and the orifice flange and the secondary or check meters have 40 feet of straight pipe between the first and second orifice flange, with 20 feet of straight pipe beween the second meter and the outlet gate.

Each meter run is equipped with a double acting straightening vane, that is, two vanes each 18 inches long held together by ½-inch strap iron, there being 18 inches between them, making the complete vane 4½ feet in length. The vanes when made are identically in the same plane and are divided into six sections with each section again divided, making 12 sections in all, but if so desired half of the vane can be twisted slightly in the ½-inch strap iron so as to give a double effect. These vanes are placed 30 feet from the first orifice.

All plates used are the heavy Westcott orifice type, the maximum orifice size being kept within 50 per cent of the flange size, the flanges being equipped with ½-inch stop cocks to drain off any liquid that might accumulate. Each line is also equipped with 1-inch bleeder valves on the bottom of the pipe, installed near the outlet gates, to allow for bleeding lines when plate inspections or changes are made. Each tube was micrometered for internal diameter before be-

ing installed, making it possible to determine the coefficient from the actual internal diameter.

The maximum capacity of the metering station at 250 pounds is 250,000,000 cubic feet of gas per day, though it was built to handle 185,000,000 cubic feet per day with the difference allowed for flexibility.

The meter house is of corrugated sheet iron with an asbestos shingle roof, and is 96 feet long and 20 feet wide with the entire interior painted white and wired for lights.

The house is built directly over the selling companies' orifice flanges, with a removable floor and no part touching the pipe, with the purchasing companies' meters piped into the house having 24 feet of ½-inch pipe in each gage line. This structure houses 42 Westcott meters with Taylor cases, with a range of 100-inch differential and 500-pound pressure. Each meter run is equipped with four thermometer wells, two on the inlet side on the high side of the straightening vane and two on the outlet side a few feet from the outlet gate. Two of these wells, one on each end of the meter run, accommodate a Tagliabue, fully compensated, 0-150° F., mercury filled, temperature recorder. The remaining two steel wells are kept filled with mercury so that a check, with an industrial thermometer, might be taken any time during the day. The flow is corrected daily for temperature.

Specific gravity tests are taken semi-monthly by means of an Ac-Me Gravity Balance. Three concrete blocks, one in each end and one in the middle of the house, were built to accommodate the gravity apparatus, to prevent vibration and resetting. A ¼-inch line connecting all meter runs when necessary, is piped to the gravity blocks, making it possible to run a gravity test on all lines without moving the apparatus. Of course the line is thoroughly blown out between tests.

The gages are tested semi-monthly, or more often if necessary, with a 100-inch water column, using a tube with a ½-inch bore and a water tank 32 inches in diameter.

The gas is passed into three 20-inch lines to the compressor station. The inlet header at the compressor station is so arranged as to make possible three different suction pressures. Therefore the meters are tied into each line, making it possible to pass any delivery into any one or all three suctions.

A serious problem arose in regard to pulsation, as the metering station is located but 1800 feet from the suction side of the compressors. However, Hodgson's scheme of using a pressure drop of four or five pounds by means of a partially closed gate or gates between stations has been applied successfully.

Seventy-six gates were used in the installation. All meter runs are painted aluminum, with the gates, flanges and fittings painted black. The houses are painted buff with a green roof. The entire station is of welded construction with the exception of the screw orifice flanges. The gages are set with the same spacing in the house and every feature throughout is symmetrical. A load dispatcher's office is built in connection with the metering station, with dispatchers on duty at all times.

To date the measurements have been very successful, as the meters are checking within ½ of 1 per cent accuracy over a period of a month. The entire setting thus far has needed no more attention than the average small setting in the field.

California Butane *in* Upward Trend

BUTANE franchising activity in California has taken a decided upward trend in the past few months, with many applications for the service of liquefied natural gas being filed with the California Railroad Commission, according to a communication received by *Western Gas* from Claude C. Brown, gas and electric engineer, for the Commission.

The following three companies have been carrying on the bulk of the franchising activity:

West Coast Gas and Fuel Company, has applied for permission to serve liquefied gas in these towns: Sonora, Jamestown, Columbia and Tuolumne, in Tuolumne County; San Andrea and Angels in Calaveras County; King City and Soledad in Monterey County; Jackson, Amador City, Plymouth, and Sutter Creek in Amador County; Placerville and El Dorado in El Dorado County; Auburn, Rocklin, Loomis, Dutch Flat and Tahoe in Placer County; Downieville in Sierra County; Quincy, Plumas County, Susanville, Lassen County; Alturas, Modoc County; Dorris, Siskiyou County; Bishop, and Independence, Inyo County; Lakeport, Lake County, and Cloverdale in Sonoma County.

Natural Gas Corporation of California has been granted franchises in 10 California towns: Arbuckle, Maxwell and Williams in Colusa County; Orland in Glenn County; Isleton in Sacramento County; Fairfield, Suisun and Vacaville in Solano County; Corning, Tehama County; and Winters, Yolo County.

This company has also applied for franchises in Ione, Amadore County; Crescent City, Del Norte County; Clovis and Pinedale in Fresno County; Arcata, Ferndale and Fortuna in Humboldt County; Fort Bragg and Willits in Mendocino County, Gonzales, and King City, Monterey County; Truckee, Nevada County; Colfax, Placer County; Blythe and Coachella, Riverside County; Folsom, Sacramento County; Barstow, San Bernardino County; Halfmoon Bay and Piscadero, San Mateo County; Mt. Shasta, Shasta County and Dunsmuir and Yreka, Siskiyou County; Jackson, Amador County; Placerville, El Dorado County; Lakeport, Lake County; Susanville, Lassen County; Alturas, Modoc County, Auburn, Placer County and Sonora, Tuolumne County.

Inland Empire Gas company is applying for franchises to serve liquefied natural gas in the following southern California towns: Niland, El Centro, Imperial, Heber, and Mexicali, all in Imperial County, and has been granted franchises in Calipatria, Holtville, Brawley and Calexico.

Three applicants have also asked for butane franchists in Barstow, Ludlow, and Victorville, in San Bernardino County, among them the Southern California Gas Company.

Permission to serve liquefied natural gas in the Las Flores Canyon and Malibu Beach districts north of Santa Monica has been asked by the Southern Counties Gas Company, headquartered at Los Angeles, Calif. The company is already serving the Santa Monica district with natural gas.

GREAT FALLS GAS CO. LOWERS RATES TO LARGE USERS

A lower schedule of natural gas rates for Great Falls, Mont., to become effective August 1, has been filed with the State Public Service Commission by the Great Falls Gas Company. The new schedule will not affect small domestic consumers, but will be very attractive to industrial users, institutions and other large consumers. All those using more than $27.50 worth of gas a month will benefit.

The present scale is:

		Per 1,000 feet
1st	5,000 cu. ft.	$ .75
Next	95,000 cu. ft.	.55
Next	400,000 cu. ft.	.40
Next	500,000 cu. ft.	.35
Over	1,000,000 cu. ft.	.325

Under this schedule, the minimum bill is $1.50 a month with the penalty for non-payment after 10 days fixed at 5 cents for each 1,000 cubic feet.

The proposed reduced scale is:

		Per 1,000 feet
1st	5,000 cu. ft.	$ .75
Next	45,000 cu. ft.	.55
Next	150,000 cu. ft.	.40
Next	300,000 cu. ft.	.35
Next	500,000 cu. ft.	.30
Next	1,000,000 cu. ft.	.275
Over	2,000,000 cu. ft.	.250

Under this schedule the minimum monthly rate will be $1.50, and the penalty for non-payment will be removed.

PACIFIC GAS AND ELECTRIC ASKS TO BUY FOWLER UTILITY

Pacific Gas and Electric Company of San Francisco, Calif., has applied for permission to purchase all outstanding shares of Fowler Gas Company stock for $12,500. The company maintains a gas plant in the town of Fowler in Fresno County. Pacific Gas and Electric will connect the city's mains to its natural gas system.

A. E. WISHON VICE-PRESIDENT OF PACIFIC GAS AND ELECTRIC

A. E. Wishon has been elected vice-president and assistant general manager of the Pacific Gas and Electric Company of San Francisco, Calif., and president of the San Joaquin Light & Power Corporation, headquartered at Fresno.

1930 Calendar

Southern California Meter Association—Los Angeles, Calif., August 28, 1930.

Pacific Coast Gas Association—Huntington Hotel, Pasadena, Calif., September 9-13, 1930.

19th Annual Safety Congress—Fort Pitt and William Penn Hotels, Pittsburgh, September 29-October 4, 1930.

International Petroleum Exposition & Congress—Tulsa, Okla., October 4-11, 1930.

American Gas Association—Municipal Auditorium, Atlantic City, N. J., October 13-17, 1930.

CITIES SERVICE LINE FROM LYONS TO SUPERIOR NEAR COMPLETION

CITIES Service Gas Company, natural gas subsidiary of the Empire Companies, has completed approximately 70 per cent of its 8-inch, 116-mile natural gas pipe line now under construction from Lyons, Kansas, to Superior, Nebraska, according to word received from the Bartlesville headquarters of the company. Ninety-five per cent of the pipe had been strung as of June 30, 75 per cent had been headwelded and approximately 66 per cent had been laid, painted and backfilled.

The line which passes through Ellsworth, Lincoln, Beloit and Mankato, in Kansas, is an extension of the company's 8-inch natural gas pipe line from Hutchinson to Lyons, Kansas. Branch lines will serve Sylvan Grove, Luray, Osborne, Smith Center and other Kansas towns along the route of the line.

The branch lines under construction include 50.7 miles of 4-inch, 32 miles of 3-inch and 40.2 miles of 2-inch pipe line, bringing the total length of the line, including laterals, to approximately 239 miles. On July 1, 75 per cent of the laterals had been completed, with 82 per cent of the pipe having been headwelded and about 72 per cent of the pipe laid. The line is being constructed by the Oklahoma Contracting Company of Dallas, Texas.

Gas Service Company is rapidly bringing to completion city distribution systems in about 12 central Kansas towns which will receive gas through the line.

Included in the towns are Barnard, Cawker, Downs, Ellsworth, Esbon, Formoso, Glen Elder, Jewell City, Lucas, Luray, Mankato, Smith Center, Beloit and Kanapolis. The work has been completed in a number of these towns, with a completion date of August 15 announced for all of them.

MONTREAL TO BE HOST TO 1931 MEETING OF CANADIAN ASS'N.

Montreal, Quebec, was selected as the next meeting place of the Canadian Gas Association during its Annual Convention held June 24 and 25 at Halifax, Nova Scotia. June 4 and 5 are the dates set for the 1931 session.

The following officers were elected to serve the Association for the coming year: A. T. Leavitt, president of the Hamilton By-Product Coke Ovens, Ltd., of Hamilton, Ontario, president; Hugh McNair, manager of gas utility, Winnipeg Electric Co., Winnipeg, Manitoba, vice-president; Harry S. Williams, superintendent of the gas department at Guelph, Ontario, second vice-president, and George W. Allen of Toronto, Ontario, secretary-treasurer.

PAYNE NAMES REPRESENTATIVE IN SOUTHERN STATE

Payne Furnace and Supply Company of Beverly Hills, Calif., announces the appointment of the Moncrief Furnace Company at Atlanta, Ga., to represent the company throughout the state of Georgia. L. F. Kent is executive head of the organization and general offices are located at 676-682 Hemphill Avenue, N. W.

NATURAL GAS TO HEAT SCHOOLS OF PARSONS, KANSAS

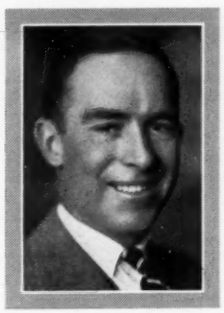
The Board of Education at Parsons, Kansas, has announced that all of the schools of the city will be heated with natural gas during the coming school term. Gas, which has been in use in some of the schools, will replace oil and coal in others.

An Essay Contest *for* Housewives

By E. A. THOMAS

Commercial Manager, Arizona Edison Company

THE average modern housewife usually has very positive reasons for liking or disliking those items which have the most to do with her daily solving of problems in household management. Also she is quite competent in the art of stating these whys and wherefores clearly and convincingly.



E. A. Thomas

At least those are our conclusions after reading over more than 200 letters written to us by Arizona women during the course of the Arizona Edison Company's recent contest on "Why I Prefer To Cook With Gas."

Launched with the beginning of a sales campaign on regulator equipped ranges, the contest had a three-fold objective, i. e., to promote interest in cooking with gas, to secure as many publishable "testimonials" as possible for use in future gas range advertising, and to obtain an up-to-the-minute prospect list. Newspapers generally were liberal in giving publicity to the contest, as well as to the range campaign.

In every form of publicity used we stressed the "write-it-in-your-own-words" motif and the fact that 200 words would suffice to tell the story of gas' preferability. The rules were few and simple. Eligible contestants were limited only to housewives residing in our five gas-served communities. Persons employed by the Arizona Edison Company and their relatives were, of course, excluded.

The Arizona Edison Company operates gas plants in the towns of Bisbee, Douglas, Globe, Miami and Yuma and supplies manufactured gas to a total of 5,704 active residential meters. Each of these communities can rightly lay claim to being a pioneer among the gradually growing cluster of the great southwest's potential metropolitan centers. Airports and golf courses are now found where not so many years ago herds of beef cattle grazed. Newness is everywhere. And more than one of our customers can therefore remember the old-fashioned wood and coal cook stove with its beauty-destroying heat and smoke. It is not surprising that the contest letters pointed unquestionably to a greater gas consciousness on the part of our gas users.

Five separate grand prizes were offered—that is to say, a $210 range for the best letter submitted in each of the five towns served. A board of judges in the company's Phoenix general office selected the prize winners. This eliminated any complaint arising on grounds of "local favoritism."

Of the 200 odd letters received, not one was found unworthy of consideration. Personal letters were written to each of the women receiving first prize, and mimeographed acknowledgements were mailed to all whose efforts failed to qualify.

We feel that the contest has been a worth-while undertaking, both from a standpoint of sales increase and public relations.

And our advertising department now possesses enough good material to keep its gas range copy sparkling and fresh for many months to come.

GOODLAND, KAN., SCHEDULED FOR SERVICE OF BUTANE GAS

Goodland, Kansas, will soon be served with liquefied natural gas by Phillips Petroleum Company. The gas will be shipped into the city on tank cars and transferred to a storage tank on the company's property.

The Goodland plant is being constructed to serve a butane gas of 550 B. t. u., and the distribution system will be practically the same as that used for natural gas.

UNITED GAS CORP. TO BUILD 45-MILE LINE IN TEXAS

United Gas Corporation has announced the construction of 45 miles of 18-inch line, extending from the Refugio field, tieing in with the Magnolia and Southern Gas Company lines extending to Austin and San Antonio. Survey on the line has already been made, and construction is to begin in the early future.

NATURAL GAS SUPPLY CO. GETS PERMIT TO OPERATE IN OKLA.

Natural Gas Supply Company has received authorization from the Oklahoma Corporation Commission to engage in constructing, maintaining and operating pipe lines in Oklahoma. It is proposed by the company to construct a gas line from the Chickasha gas field in a northwesterly direction to connect with the gas line of the State Fuel Supply Company.

L. B. JONES GOES TO HONOLULU TO INSTALL OIL GAS SET

Leon B. Jones, gas engineer of San Francisco, is scheduled to leave for Honolulu August 16, to supervise the erection of plant extensions for the Honolulu Gas Company. A new oil gas set, developed by Mr. Jones, is to be installed. The plant capacity will thus be increased by about four million feet.

LINE TO SHERIDAN, WYO., FROM BILLY CREEK, STARTED

Survey of the natural gas transmission line from Billy Creek field south of Buffalo, Wyo., to Sheridan, is now complete and construction has begun. The line will be of 8-inch pipe and will be 55 miles long, and is expected to be complete by early fall.

IOWA RAILWAY & LIGHT CORP. GETS MOUNT VERNON PERMIT

Voters of Mount Vernon, Iowa, have granted a gas franchise to the Iowa Railway & Light Corporation.

SALES WRINKLES

"He Gains Wisdom in a Happy Way Who Gains it by Another's Experience"... PLAUTUS

One Sale Sells the Neighborhood

HERE is a practice which is helping one salesman to pyramid his sales of warm air circulating cabinet type heaters. Says Joe Hamlin of the Capital Gas & Electric Company at Topeka, Kansas:

"I make it a point to call upon each of my Puritan gas heater buyers about an hour after the unit has been installed in the home. My visit has all the appearance of a service call, and I inquire whether the appliance has been properly installed and is operating satisfactorily.

"Appealing to the customer's pride of ownership, I take my handkerchief and rub the heater until there is not a fleck of dust to mar its glossiness. Then I ask the housewife if I may invite her next door neighbor in to see how well the new purchase looks in her home. The request is seldom refused, with the result that the neighbor is brought in and becomes half-way sold on possessing one of the heaters herself. In her well directed enthusiasm the home keeper permits me to bring in other neighbors from time to time to view the appliance. This type of demonstration makes sales."

—Joe Hamlin
Capital Gas & Electric Company
Topeka, Kansas

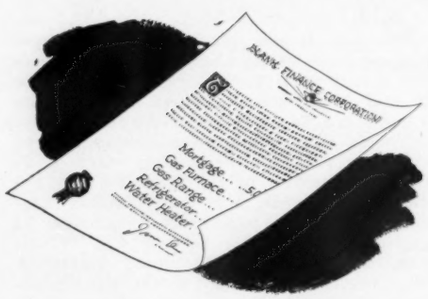
Write Gas Equipment Into the Home Loan

ONE of the most opportune times to contact a prospect and engineer a sale is on the occasion of such prospect refinancing his home.

Refinancings in any community are numerous. It is possible for any salesman to know definitely the dates on which existing mortgages or deeds of trust fall due by searching the county records. A clerk in the County Recorder's office either will show an inquirer how to run down this data himself, or for a small sum will compile the information for the salesman.

Equipped with a knowledge that certain home owners must refinance their property, the gas furnace salesman is able to show the owner where his home can be thoroughly modernized by securing the necessary finance in his new loan. Many people are willing to consolidate their indebtedness in this way over a long period of time, rather than enter into a short term installment contract, and have several outstanding obligations.

In addition to this, it is well to remember that a tie-in with investment companies such as building and loan, mortgage, insurance home loans, and banks, is a dividend paying proposition. A salesman can advantageously use the loan information it is possible to secure from such companies and turn it to account by having the purchase of gas equipment definitely associated with the new loan in the home owner's mind.



Therefore, in selecting a company with which to deposit savings, select one which will in appreciation of the depositor relationship, cooperate commercially with the salesman.

—A. W. Young
Pacific Gas and Electric Company
Oakland, California

Once a Customer, Always a Customer

"ONCE a customer, always a customer." This slogan summarizes a very simple and efficient plan for increasing individual sales and capitalizing upon past contacts.

It is sometimes possible to strike the buyer at the psychological moment and sell a complete gas installation—all the major appliances in a single order. But this is the fortunate exception. Except in the case of new homes, the single sale is the rule, and after lining up a buyer on one appliance, on time payments, the salesman must bide his time.

Often, however, when signing a contract the customer will volunteer the information that she has several more payments to make on a washing machine, or a radio. It is not difficult to find out just when the next contract of this sort will mature, and make a note of the date, for then is the logical time to call back again and sell gas appliance number two.

When the contract for the original gas appliance matures, have it receipted in the office, deliver it *in person* to the customer (who is already sold on the time payment plan), and the way is paved to another sale. The ground is especially well laid by the fact that the salesman knows exactly what gas appliances are needed, through his previous contacts.

—Leonard R. H. Hardie
Southern Counties Gas Company
San Pedro, California

EASTERN COLORADO GAS CO. ASKS FLAGLER FRANCHISE

Eastern Colorado Gas Company has asked for a 25-year natural gas franchise in the town of Flagler, Colo.

GAS SERVICE AWARDS PRIZES IN GROUP SALES CAMPAIGN

R. M. Sayre, new business representative of the Kansas City Gas Company, recently won first prize of $150 for making more group sales of appliances than any other salesman in the Gas Service Company organization during the period from January 29 to July 1.

A second prize of $100 went to J. M. Shively of the St. Joseph Gas Company, and a third prize of $50 was awarded to Harold Legge of the Wyandotte County Gas Company, Kansas City, Kansas. House heating jobs, incinerators and water heaters were included in the group sales. Mr. Sayre was also awarded a prize of $100 for selling the greatest number of domestic type incinerators.

The prizes were offered by Thomas F. Kennedy, general new business manager of the Doherty companies, and announcement of the awards was made by F. M. Rosenkrans, new business manager of the Gas Service Company.

GREAT FALLS CO. GETS RESULTS FROM SALES CAMPAIGN

Twelve gas-fired refrigerators have been sold and several prospects obtained by the Great Falls Gas Company of Great Falls, Mont., as a result of a campaign held May 19 to June 19. In this campaign three small newspaper ads were used each week and one large ad on Sundays. A radio announcement of 125 words was made three days a week and a 10-minute program given three days a week over Station KFBB at Great Falls. During these programs it was announced that anyone wishing a free recipe book of frozen desserts could procure one by telephoning to the gas company. These books were delivered by the salesmen personally and served as a contact with prospective customers. The second week of the campaign a three-day cooking school was held in the office, featuring refrigerators and gas-fired ranges.

COMBINATION GAS RATES OFFERED USERS BY B. C. ELECT. RY. CO.

Gas heating rates which vary from 60c to 75c per 1,000 c.f., are now obtainable in Vancouver, B. C., for combination house heating, water heating, and refrigeration, when piped through the gas heating meter, according to an announcement by the British Columbia Electric Railway Company's gas department. Similarly users of gas water heaters may now obtain the gas heating rate by the use of radiant type or other space heaters. A gas water heater and a gas refrigerator will also entitle the owner to the same rate. A separate meter is necessary in all cases where the lower rate is desired, and some adjustment of pipe will be necessary to connect up the new meters. This piping rearrangement cost is charged to the consumer by the company.

PRIZES IN NAT'L WINDOW DISPLAY CONTEST ANNOUNCED

Final awards of the national prizes in the window display contest sponsored by Electrolux Refrigerator Sales, Inc., have been announced. First prize of $150 was won by Burt V. Anderson of Minneapolis. Other prizes awarded in western territory were fourth, of $50 to Walter D. Thurber, manager department of advertising and publicity of Southern Counties Gas Company, Los Angeles, Calif., and sixth, of $25, to Paul A. Brittain, advertising manager for the Seattle Gas Company, Seattle, Washington.

A gas appliance session at the Texas-Louisana Power Company's recent short course in appliance operation and service.

Fort Worth Appliance Short Course

By RUTH PHILLIPS STEINHAUSER

Manager, Public Relations Department
Texas-Louisiana Power Company, Fort Worth, Texas

A SHORT course in gas and electric equipment for the home was held by the Texas-Louisiana Power Company on June 12 and 13 at the Texas Hotel in Fort Worth, for 50 women employees from the state of Texas.

The purpose of the meeting was to organize the women in women's committee work, as well as to give them a working knowledge of appliances for the use of their various services in the home. The two-day course consisted of lectures, demonstrations and laboratory work.

The welcome address was made by A. T. Schultz, executive vice-president of the company. C. A. Brooks, of New York, president of General Management Corporation, addressed the conference on the value of well trained women employees in the public utility business, both from a public relations and a sales angle.

The program for the gas section included the study of gas cookery, gas refrigeration, water heaters, space heaters and laundry equipment. Appliances were first demonstrated and fully discussed by representatives of the manufacturers. Demonstrations and discussions were followed by laboratory periods, when the students experimented with the various appliances.

One of the high-lights of the two day program was a talk on "Sales Laziness" by J. E. Bryan, commercial manager. L. D. Wittkower, merchandise manager, spoke on "Sales and Public Relations."

Women from both gas and electric properties participated in a program devoted to rate structures, which was conducted by F. D. Mallory, assistant commercial manager and rate engineer.

Those speaking before the gas section which convened on Friday, in the Longhorn Room of the Texas Hotel were Mrs. Minnie Hendricks, who gave a Roper Range demonstration; J. C. Mansfield, of the George D. Roper Corp., who spoke on gas range construction and use; and C. H. Seidenglanz of Seidenglanz & Company, who spoke on water heater construction and use.

E. C. Stoll of the Estate Stove Company, addressed the group on circulating type heaters, and William R. Hill of the Automatic Washer Company spoke on laundry equipment. The subject of space heaters was covered by Leon Taylor of O'Keefe & Merritt . R. P. Haskin of the Electrolux Refrigerator Sales, Inc., spoke on refrigeration.

A banquet for the visitors and for the manufacturers' representatives, who contributed in a large measure toward the success of the school was held on Thursday night at the Fort Worth University Club.

PERSONNEL CHANGES ANNOUNCED IN BATON ROUGE UTILITY

Several changes in the personnel of the Baton Rouge Electric Company of Baton Rouge, La., have been announced. W. R. Bell has been appointed to the position of general superintendent of the company, and will have direct supervision of operating and sales work.

Elliott G. Peabody is now filling the post of sales manager for the company. Mr. Peabody had been with the statistics department in the Boston, Mass., office of Stone and Webster, later going to the company's Fall River, Mass., office.

W. G. Gay, formerly general sales manager for the Baton Rouge Company, has accepted the post of sales manager of the Virginia Electric & Power Company at Norfolk, Va.

SAFETY GAS MAIN STOPPER CO. ISSUES NEW CATALOG NO. 32

Safety Gas Main Stopper Company of Brooklyn, New York, has issued a new catalog, No. 32, including price-list and discount sheet. The new 32-page booklet describes the company's line of equipment, and is well illustrated with half-tones, line cuts and phantom views.

Copies may be obtained by addressing the company, 523 Atlantic avenue, Brooklyn, N. Y.

Louis Stein

Amos H. Abbott

Louis Stein, Director *of* Gas Sales *for* No. States

LOUIS STEIN, gas engineer for the Northern States Power Company of Minneapolis, Minnesota, has been named director of gas sales for the company, according to an announcement made by R. F. Pack, vice-president and general manager of the company.

The new appointment was announced at a dinner meeting of company personnel at which P. J. Montgomery, manager of the Grand Forks division, acted as toastmaster. Mr. Pack officiated at the meeting. In his opening remarks, Mr. Pack stated that in keeping with the rapid strides which the gas industry is making throughout the west and middle west, the company is placing increasing emphasis upon gas sales development.

W. H. Hodge, vice-president and manager of the sales and advertising department of Byllesby Engineering and Management Corporation, parent organization of Northern States, also spoke on the importance of gas sales promotion.

Mr. Stein has long been interested in activities of the industry in his territory, having been president of the Mid-West Gas Association in 1928-1929.

Amos H. Abbott has been appointed to the post of gas engineer formerly held by Mr. Stein. Mr. Abbott entered the employ of the Northern States Power Company, St. Paul Division, about four years ago, after having served six years with St. Paul Gas Light Company in various capacities. Since January, 1928, Mr. Abbott has occupied the post of assistant gas engineer.

The position of assistant gas engineer has been taken by Robert L. Rundorff, who has been engaged in operating and sales activities for Northern States Power for the past six years.

LONE STAR ADDS TO DALLAS AND FORT WORTH GAS SUPPLY

The Lone Star Gas Company is looping its gas pipe line from Plant 4 at Ranger, Texas, to the Pueblo, Texas, gasoline plant, a distance of approximately 16 miles. The line is being constructed in order to bring additional gas from west Texas to Dallas and Fort Worth. Completion of the line, which is of 12-inch pipe, is announced for August 1.

Lone Star is also re-conditioning one of the oldest lines in the company's system, namely the first line which it laid into Oklahoma. This line, a 12-inch, 35-mile line, begins at the Petrolia, Texas, station and ends at Keyes corner in Cotton County, Oklahoma, bringing gas from the Chickasha field in Grady County, Oklahoma, and from the Duncan field, Stevens County, into the Lone Star pipe line system.

New Home *for* St. Paul Office *of* No. States

DETAILED plans for the new St. Paul office of the Northern States Power Company have been announced by G. O. House, manager of the company's office in that city.

The new building will be erected at the corner of Fifth and Wabasha streets, and will have a frontage of 167 feet 6 inches on Fifth and 75 feet on Wabasha. It will be six stories in height, with foundation constructed to carry additional stories. Two basements will be provided.

Following the modern trend of skyscraper architecture, the structure will be of reinforced concrete with stone finish and ornamental exterior design. Modernistic lighting effects will predominate in the interior, while a flood lighting system will be employed to add beauty to the exterior at night.

A sloping site will provide two ground floors, the entrance of one being at Fifth and Wabasha streets, where there will be the customer's lobby and cashier's department, and a display of gas and electric appliances.

Artist's sketch of Northern States Power Company office to be erected at St. Paul, Minnesota.

Access to the other main floor will be through the lower level opening from Fifth street. A special feature of this floor will be a modern bungalow.

The main lobby will be of terrazza laid in modernistic design, with bright metal strips between the various colors. The walls and columns will be wainscotted 7 feet high with marble in light and dark colors. Above the marble on the columns will be the lighting units which will be built into and become a part of the beam and off-set ceiling. The entire first floor will be of modernistic design.

Northern States Power Company is subsidiary to the Byllesby Engineering and Management Corporation.

LINE TO WILLISTON, NORTH DAKOTA COMPLETED

The Montana-Dakota Power Company in July completed a gas transmission line from Glendive, Montana, to Williston, North Dakota, serving intermediate towns, among them Savage, Sidney, and Fairview, Montana.

This line is of 12-inch pipe, and is constructed for 500-pound operating pressure of A. O. Smith Corporation electrically welded pipe. This line goes through the Lower Yellowstone Valley Irrigation Project, and makes gas available to the farmers in this fertile valley.

The line is 105 miles in length, crossing the Yellowstone River twice and the Missouri River once. The gas supplied to this line comes from the Cabin Creek field, which also supplied natural to the Black Hills and Miles City, Montana. Gas will also be supplied from this field to the towns between Glendive and Bismarck, North Dakota.

The 12-inch line, now under construction to serve Bismarck and points en route, is expected to be completed by September 1. The Bismark line goes through the famous "Bad Lands" of the Little Missouri River.

Coast Counties Change *to* Natural Service Complete

STRAIGHT natural gas service has now been completed in the entire territory served by the Coast Counties Gas and Electric Company, headquartered in Santa Cruz, Calif., including both the Northern and Southern Divisions.

The work was brought to a conclusion during the past month, when on July 1 natural gas was turned into the mains at Watsonville. Two weeks later service of the new fuel was begun in the Santa Cruz area.

The completion of this service in the Santa Cruz area comes as a finale to a year's program given over to construction work and the laying of new distribution systems.

New systems were laid in San Juan, Aromas, Morgan Hill, San Martin, Tres Pinos, Walnut Creek, Bay Point and Brentwood.

Actual transmission line construction was commenced in the Gilroy District in November, 1929, and the first natural gas to be served in Coast Counties territory was in Hollister on January 6, followed closely by service in Gilroy. The change-over crews were then switched to the Northern Division, and this work completed there as rapidly as possible.

Many of the fruit driers in the Watsonville district are planning to take immediate advantage of the flexibility of this new fuel, and other industrial installations will be completed within the near future.

C. F. Anderson of the Los Angeles Gas and Electric Corporation's gas distribution department, assisted by R. L. Nance and E. A. Chase of the same department, has directed the work of change-over in the Watsonville and Santa Cruz territories of Coast Counties during the past month.

BARBER GAS BURNER CO. PLANS CAMPAIGN ON HEATING

The Barber Gas Burner Company of Cleveland, Ohio, has released for the use of the heating trade and the gas industry a sales campaign for the coming heating season, displayed in an attractive folder.

The campaign is designed to be carried out through the use of direct-mail pieces, a newspaper mat service and trade paper advertising.

The Barber Burner Album of Gas Heating Facts is included in the folder and is designed for the use of conversion burner salesmen.

The company's catalog No. 30, which supersedes catalog No. 29-A, is also included and gives a list of Barber burners for round and rectangular boilers and furnaces and for other heating uses. Copies of the presentation book complete with enclosures have been mailed to the trade and an additional supply is being held for distribution to any one interested who may request them.

A. B. Paterson Now Head *of* New Orleans Co.

A. B. PATERSON, vice-president and general manager of New Orleans Public Service Inc., has been appointed to serve the company in the capacity of president, succeeding Herbert B. Flowers, resigned.

A. B. Paterson

The new president has been with the company for the past 10 years and is widely known in the utility field. He went to New Orleans in 1917 as a representative of the Henry L. Doherty & Co., and later entered the employ of the New Orleans Railway and Light Company. Soon after the reorganization of the company under the name of New Orleans Public Service Inc., Mr. Paterson was appointed general manager. Later he was elected vice-president and last year was made a member of the board of directors.

Mr. Flowers, retiring officer, had been president of the New Orleans company since 1923 and was connected with public utility interests for the past 30 years, having been vice-president and general manager of the United Railway and Electric Company of Baltimore for many years. As head of New Orleans Public Service Inc., Mr. Flowers has been prominently identified with civic and commercial development of his city, taking an active part in many organizations.

WYOMING COMPANY GETS PERMIT TO INCREASE GAS RATES

A new schedule of gas rates for consumers in Cheyenne, Wyo., has been announced by the Cheyenne Light, Fuel & Power Company of that city.

Gas has been supplied from the Wellington and Fort Collins gas fields, and the supply in that area is becoming depleted, rendering it necessary to bring a part of the city's supply of gas from the Panhandle-Denver gas line at a greater expense to the company.

The new rates are dependent on the use of Texas gas and represent an increase in present rates of from 5 to 10 per cent, ranging from 12 cents per 100 cubic feet to 3½ cents per 100 cubic feet for maximum consumption. The minimum rate is $1.25.

Permission for the increase in rates was granted early in July by the Wyoming Public Service Commission.

AMERICAN STOVE CO. ANNOUNCES CHANGE IN SALES ORGANIZATION

American Stove Company of Cleveland, Ohio, has announced a complete change in its sales organization. Stanley E. Little, 1825 East 40th Street, Cleveland, has been appointed vice-president in charge of sales of all divisions, and Thomas Rath is now vice-president, director of publicity at Lorain, Ohio.

The six present divisions of the company hereafter will be manufacturing divisions only. These divisions are: George M. Clark & Company Division, Harvey, Ill.; Dangler Stove Company Division, Cleveland, Ohio; Direct Action Stove Company Division, Lorain, Ohio; New Process Stove Company Division, Cleveland, Ohio; Quick Meal Stove Company Division, St. Louis, Mo.; Reliable Stove Company Division, Cleveland, Ohio.

The United States and Canada have been divided into seven sales districts to be known as sales divisions of American Stove Company. Headquarters for each sales division is established in a city recognized as a center and natural source of supply for that district.

Appointments in the sales division which affect the western territory of the company are as follows:

A. F. Millikan, manager, Northern Sales Division, 179 North Michigan Avenue, Chicago, Ill. R. L. Kahle, manager, South Western Sales Division, 825 Chouteau Avenue St. Louis, Mo. E. P. Millikan, manager, Pacific Sales Division, 274 Brannan Street, San Francisco, Calif.

The Northern Sales Division includes northern Indiana, Michigan, northern Illinois, Wisconsin, Iowa, Minnesota, North and South Dakota, Nebraska, Colorado, Utah, Wyoming, Montana and central Canada. The South Western Sales Division includes southern Illinois, Missouri, Kansas, Oklahoma, Arkansas, Louisiana, Texas and New Mexico. The Pacific Sales Division district includes Washington, Oregon, Idaho, California, Nevada, Arizona and western Canada.

F. M. Banks Gen'l Supt. *of* Sales *for* So. Cal. Gas

F. M. BANKS, manager of the San Joaquin Division of the Southern California Gas Company, has been appointed to fill the newly created position of general superintendent of sales with offices at the company's Los Angeles headquarters.

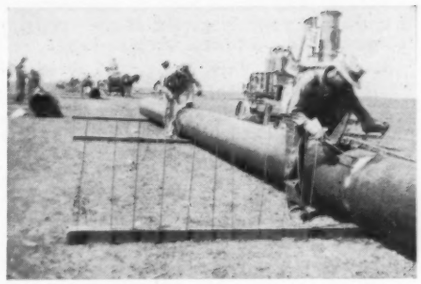
F. M. Banks

Mr. Banks was sales supervisor for some years in the Eastern Division of the company, headquartered at San Bernardino, and was then sent to the newly organized San Joaquin Valley Division as manager. In that position he had charge of the company's San Joaquin properties during their expansion and the change-over to natural gas.

C. M. Eyman has been appointed to take Mr. Banks' place as manager of the San Joaquin Division. He has been acting as division superintendent with Mr. Banks since the formation of the division.

STANDARD GAS EQUIPMENT TRADE-PRESS CAMPAIGN

Standard Gas Equipment Corp., 18 East Forty-first Street, New York, is carrying on an extensive program of advertising in the national trade press in the interest of heavy duty hotel and restaurant cooking equipment. Total circulation employed for the campaign is 97,300, and the advertising copy stresses advantages of gas for cooking.



Scenes along the route of Missouri-Kansas Pipe line Company's 1200-mile line to Indianapolis. Solid weld line at creek crossing shown in upper view, with drip located between two bends. Roll welding operations on 22-inch pipe seen in lower view.

Rapid Headway *on* Mo.-Kan. Line *to* Indianapolis

CONSTRUCTION on the Missouri-Kansas Pipe Line Company's line from Stinnet in Moore County, Texas Panhandle to Indianapolis is being pushed rapidly forward, according to contractors who have charge of the laying of the line.

Oklahoma Contracting Company had completed 55 miles of its unit of the line on July 24, and Williams Brothers and Connor & Son were reporting equally substantial headway.

The line at completion will be approximately 1,200 miles in length and will deliver gas to about 50 towns through Missouri, Illinois and Indiana, among them Boonville, Jefferson City, Moberly and Mexico in Missouri, Springfield, Beardstown, Decatur, Urbana, Champaign and Danville in Illinois, and Indianapolis, Indiana.

LINE TO SEDALIA, MO., GETS UNDER WAY IN JULY

The Cities Service Gas Company on July 3 announced that the company has awarded the contract for construction of a 12-inch natural gas pipe line from Ottawa, Kan., to Sedalia, Mo., to Henry L. Lemons, Inc., pipe line contractor of Tulsa, Okla. The contract was awarded at the company's offices in Bartlesville, Okla.

The work on this new line began on July 18 and is scheduled to be completed in 70 days. This means that the project will be completed and placed in operation not later than October 1. The main line is to be 110 miles in length, while several laterals are to be built to supply other cities adjacent to the system.

At Ottawa the line will connect with the Cities Service Gas Company's extensive main line system which brings gas from the Texas Panhandle and from fields in Oklahoma. All of the right of way has been obtained.

The Cities Service Co. now operates a manufactured gas plant at Sedalia.

Gas Appliance Adjustment Manual

(Continued from Page 25)

direct you in the gas appliance adjustment and survey work. You should, therefore, read them carefully.

b. If you find it impossible or impractical to follow them in any individual case, your Team Captain or Foreman will instruct you how to proceed.

c. Be neat in appearance and courteous in manner and demonstrate to the consumer that the Company is giving careful and intelligent attention to the work in hand.

d. While on duty a copy of these instructions must be carried for reference.

e. Smoking on the consumer's premises, or the use of intoxicating liquors, is not permitted during working hours.

f. You will be expected to carry on the spirit of good will and friendship that exists between the consumer and the Company.

g. The Company will make all minor adjustments free of charge. Employees of the Company are not allowed to do any work on their own account for consumers. Do not accept money from consumer.

h. Do not, under any circumstances whatsoever, turn on or turn off gas without previously notifying someone in charge of the house and watching the tally hand to determine that no gas is passing through the meter. After turning on gas be sure that all pilots are properly lighted.

i. Attention to a gas leak is of the utmost importance and must be handled with dispatch and with the greatest care.

j. Report to the Team Captain at the designated meeting place three times daily, or as otherwise provided.

Eight A.M.
Twelve Noon.
Between 4:45 and 5:00 P.M.

Notify your Foreman by 8:00 A.M. if for any reason you cannot report for duty.

k. All injuries and accidents must be promptly reported, as arranged for by your Team Captain.

l. "First Aid" must be applied to all injuries promptly.

m. You must at all times carry a *complete* outfit of tools. If you lose or break a tool, notify the Team Captain the *same day* for replacement. You must furnish a watch with a second hand.

2. Filling Out Cards

a. Cards must be neatly written, kept clean, and be filled out immediately on the completion of each job, before you leave the premises.

b. All cards completed before noon must be turned over to the Team Captain at noon.

c. Turn in *all* cards to your Team Captain every night, together with your work sheet and time card.

d. The information called for on the card is of the utmost importance and must be filled in completely.

3. Doing the Work

a. If unable to get in, note on the survey card, and leave a "not at home" notice at the front door.

b. If house is vacant, so state on the survey card.

c. Go to the rear door. When the party answers the door, say you are from the Pacific Gas and Electric Company, and that you have called to inspect and to make minor adjustments to all of their appliances.

d. Report the type of appliance in use, kind of fuel used and condition of the appliance. This must be done for each kind of appliance; if the consumer does not have any one of the type of appliances listed, so state on survey card. Dangerous or worn out appliances or important facts should be written in red.

e. State clearly just what you did to each burner:—Example: Gas range, 4 top burners; decreased orifice, 2. Placed new orifice, 1. Increased air, 1. Cleaned all mixers.

f. Remove anything that may be in the oven before lighting the oven burner. After adjusting the oven burner, close the oven and broiler doors; allow the oven burner to burn until you have finished the top burners, then check to see if the venting of the oven is satisfactory, and that the flame does not float. When oven has heat control, be certain that the gas supply on the pilot and minimum flame is adequate. The flame of the pilot burner should strike the flame of oven burner. The minimum flame should burn about ⅛-inch high when oven heat control has cut off.

g. Adjust all range burners with the gas cock wide open. The tip of the flame should just touch the bottom of the vessel being heated, or the bottom of a closed top range. Flame should not come up around the side of vessel; nor float around under the closed top.

h. Explain to someone on the premises before you leave, that the appliances are in proper adjustment. Some people want the range burners turned up high; others want them low. Be careful not to get burners too low. Explain that if the burners are a little high, they may be turned down with the valve.

i. Great care must be used in the replacement of orifices. If the appliance is in such condition that it is apparent that to work on it will cause some repairs to be necessary, the employee should take great pains to explain this to the consumer, and the consumer be referred to the agency of the appliance for general repair work. Report in detail with red pencil what is wrong and your advice to the consumer. Be sure and not speak unfavorably of any gas appliances or dealer.

j. Check the draft on all appliances by closing the door on the gas range oven; the tank, instantaneous or storage water heater, and the gas furnace if it is equipped with one. Allow the gas to burn approximately five minutes, then *with the door closed* watch the flame to see that it does not smother, or float to be sure that the vent is clear and sufficient to properly carry away the products of combustion. If there is a down draft or stoppage in the chimney or vent advise the consumer to have her service man clear it.

k. All vented individual room heaters of all types should be burned long enough (approximately five minutes) to see that the flame does not smother.

l. Before lighting a furnace, boiler or oven, inspect the valves to see that they are turned off; do not allow gas to accumulate and then apply fire to the compartment, you may cause an explosion and be burned.

m. The flame on a tank water heater should not reach higher than the third coil, with the valve turned full on. The flame in a combination heater should be adjusted to reach up around the water container.

n. The pilot flame, on automatic gas water heaters, should strike the burner flame. The flame of the burners of heater should not reach higher than the top of second set of coils.

o. The pilot flame on a gas furnace must come in contact with the flame of the burner, to assure the gas lighting when automatic device is used. Adjust the gas furnace burner so that each stool of the burner lights readily.

4. Team Captains

a. The Team Captains will be responsible for the completed work of his crew, and their personal conduct.

b. Meet the crew three times a day, assist them with their reports; go with them to adjust troublesome appliances, and to see that where any damage is done to an appliance the repair is made at the earliest possible moment.

c. Receive and inspect all of the reports every night, arrange the routes for the next day; keep men supplied with work, stationery, and equipment.

d. Keep a record of the territory covered by each man every day, and a daily record of the number of men and completed orders turned in by each man every day. Collect and forward to office all time cards, survey and reports.

e. Call the office three times daily and take care of all the telephone calls received.

f. furnish transportation whenever necessary during working hours.

g. Carry a "First Aid Kit" and render first aid when necessary.

TEXAS CITIES GAS CO. ADDS NEW LINES OF APPLIANCES

C. H. Price in charge of the merchandising department of the Texas Cities Gas Co., at El Paso has announced the addition of two new lines of warm air furnaces and a new water heater line.

While the temperature at El Paso ranged around 101 and 102 degrees during June and July, 81 Roberts conversion burners were installed by Mr. Price's department in that city.

OKMULGEE OFFICE OF OKLA. NAT. GAS CORP. IS MOVED

The Okmulgee office of the Oklahoma Natural Gas Corporatior. has been moved to larger quarters on the corner of 6th and Okmulgee streets. The new office, which is located on the first floor of a brick building, utilizes about 50x140 feet of floor space, giving ample room for the displaying of gas appliances.

MISSOURI P. & L. CO. ASKS GAS FRANCHISE IN SEVERAL TOWNS

Missouri Power & Light Company is seeking natural gas franchises in a number of cities in Missouri, among them Fulton, Excelsior Springs, Moberly and Fayette. The company, which operates manufactured gas plants in about six Missouri towns, has a contract with the Missouri-Kansas Pipeline Company for its supply of natural gas.

BUTANE GAS FRANCHISE WANTED IN LAKEVIEW, OREGON

Application for a gas franchise to serve liquefied petroleum gas in the town of Lakeview, Oregon, has been filed by the Lakeview Water Company.

Major Additions Under Way *for* Cities Service

A CONSTRUCTION program now under way by the Cities Service Gas Company natural gas subsidiary of the Empire Companies, includes the addition of 24 new compressor station units of 1,000 horse power each, at strategic points over its system. Fifteen of these units are being installed in the stations on the company's 20-inch line from the Texas Panhandle to Wichita, Kansas, with five units going into the new compressor station under construction at Blackwell, Oklahoma, on the company's line from the Oklahoma City field. Four units will go into a new station under construction at Drumright, Oklahoma, on the line from Seminole, connecting at Ottawa with the Panhandle line.

Other improvements and additions to the company's system which are now in the process of construction include a 32-mile extension of the Oklahoma City 20-inch line from Dilworth, Oklahoma, to a point south of Wichita. Also the Dilworth-Cambridge 16-inch line is being improved for higher-pressure service.

SEATTLE GAS COMPANY OPENS NEW RENTON OFFICE

THE Seattle Gas Company on June 24 opened an attractive office and display room in Renton, a suburb of Seattle, with a population of 4,000 people.

The new store is located at the corner of Third and Main streets, one of the most prominent locations in Renton, making display space available on two sides. The floor is covered with tiled linoleum and the stucco walls are softly shaded. At night the store is flood lighted with 31 reflector lamps, making it an outstanding spot in the down-town section. A large Central Public Service "Gasco" Neon sign is visible for many blocks.

To announce the opening of the new store, the Seattle Gas Company in conjunction with the Renton Chronicle, sponsored a cooking school on June 24 and 25. The mayor of Renton made the opening address, and complimented the company on its progressive policy in keeping with the spirit and progress of the growing community. James F. Pollard, general manager of Seattle Gas Company, also spoke to those in attendance at the school.

Approximately 500 women enjoyed the demonstrations by Alice Gibbs and Ruth Hopkins, home service representatives of the company. Samples of many of the tasty dishes prepared on the new Tappan and Smoothtop ranges and in the Electrolux gas refrigerator were distributed.

Many valuable prizes were presented through the courtesy of the local merchants who cooperated and extended their welcome to the new store. The grand prize was a Ruud water heater presented by the gas company.

MOORE BROTHERS CO. ANNOUNCES NEW PURITAN HEATER

Moore Brothers Company, Joliet, Illinois, has recently announced an addition to the line of Puritan gas heaters to be called the 18 Series Puritan Heater.

A feature of the new appliance is the fact that it combines radiant heat with circulating heat. Radiants and burners mounted in the front unit send radiant heat through the grill in the lower part of the heater front. This grill is provided with panels which may be opened or closed and when closed the heater is of the circulating type.

The construction of the heater is such that when the panels in the front are open for radiant heat, the heater continues to circulate warm humidified air.

The multiple unit construction and safety features which have been embodied in Moore Brothers Puritan line are also incorporated in this heater.

The new 18 Series Puritan Heater is available in two sizes—70,000 and 105,000 B.t.u. input, and in two finishes, two-tone walnut porcelain enamel and plain finished black, not enameled.

Information and prices on this new heater are now available and may be secured by writing to the company.

SEAMAN GOES TO CINCINNATI, HODSDON TAKES HIS PLACE

Van Brunt Seaman, representative of the Henry L. Doherty & Co. Customer-Ownership Department, with headquarters at Kansas City, Mo., has been named full time securities manager of the company's Cincinnati, Ohio, office, S. B. Irelan, customer-ownership manager of the Doherty company, has announced. Mr. Seaman took up his new duties in Cincinnati on July 7.

Mr. Seaman, prior to entering customer-ownership work with this company more than two years ago, was in charge of the budget work of the Kansas City Gas Company and the Wyandotte County Gas Company in Kansas City, Kan. He came to Kansas City from the company's New York office, where he had worked in the budget department, when the Doherty organization purchased the Kansas City companies in 1925.

Mr. Irelan announced that Mr. Seaman's place in the Customer-Ownership Department will be filled by Walter Hodsdon, field manager of the Doherty securities office at Lincoln, Neb.

ARTHUR F. ERICKSON TO MANAGE S. F. OFFICE FOR MINNEAPOLIS CO.

Announcement is made of the appointment of Arthur F. Erickson as manager of the new San Francisco office of the Minneapolis-Honeywell Regulator Company of Milwaukee, Wis. At the head of his own company, the Arthur F. Erickson Company, he has distributed Minneapolis-Honeywell products on the Pacific coast for the past five years. He invented the first solenoid operated gas valve and his patents are still the basis on which Minneapolis-Honeywell Series 20 valves are made.

Mr. Erickson brings to his new position a fund of practical and technical engineering experience.

CENTRAL ARIZONA L. & P. CO. ISSUES $7,500,000 BONDS

Central Arizona Light & Power Company, distributor of gas in Phoenix and Tempe, Arizona, and electricity to five Arizona towns including Phoenix and Tempe, has issued $7,500,000 in first mortgage, gold bonds, bearing 5 per cent interest and due in 1960.

The proceeds will be used to retire all funded debt now outstanding, and to reimburse the company for certain expenditures made for additions to property. H. L. Aller is president of the company.

KANSAS PIPE LINE & GAS CO. GETS 10 MORE FRANCHISES

Kansas Pipe Line & Gas Company has been granted permission by the Kansas Public Service Commission to serve gas in the towns of Gypsum, Canton, Chapman, Hope, Enterprise, Assaria, Pretty Prairie, Galva, Buhler and Inman, all in Kansas.

No. Natural Line Complete *to* Beatrice, Aug. 1

CONSTRUCTION work on the Northern Natural Gas Company line from the Texas Panhandle to points in Iowa and Nebraska is being pushed rapidly forward, with completion of the project as far as Lincoln and Beatrice being announced for August 1 or shortly thereafter. About 150 miles of the line had been completed the middle of July, with about 75 miles yet to be constructed.

Excavation work on the first of the compressor stations to be built on the line had been completed the latter part of July with work progressing rapidly on this station, located about two miles from Clifton, Kansas. It is planned to complete this station by the early fall months in time to be called into service for the winter load.

The Clifton station will be equipped with five Cooper-Bessemer engines of 1,000 h.p. each. Later, additional units will be installed bringing the total number at the station to 20. The Lone Star Gas Company has charge of the construction of the Clifton station and is also charged with the planning of all stations going in on the line. Another station is to be constructed at Abilene, Kansas. The North American Light & Power Company will contract for the erection of this station.

Interests represented in the Northern Natural Gas Corporation are the United Light & Power Company, the North American Light & Power Company and the Lone Star Gas Corporation.

OFFICERS OF S. W. DEVELOPMENT CO., NEWLY FORMED, ARE NAMED

Officers of the recently formed Southwestern Development Company, a subsidiary of the Producers & Refiners Corp., which in turn is a subsidiary of the Prairie Oil & Gas Company, are Nelson K. Moody, president and director; and W. S. Fitzpatrick, Dana H. Kelsey, John Fertig, Albert R. Jones, Frank E. Jones and E. W. Goebel, directors.

This company owns an interest in the Panhandle-to-Chicago gas line which will be constructed. Other interests identified with the project are the Cities Service Gas Company, the Insull interests, Standard Oil of New Jersey, Texas Corporation, Skelly Oil Company, Phillips Petroleum Company and the Columbian Carbon Company. The Southwestern Development Company operates from Independence, Kansas.

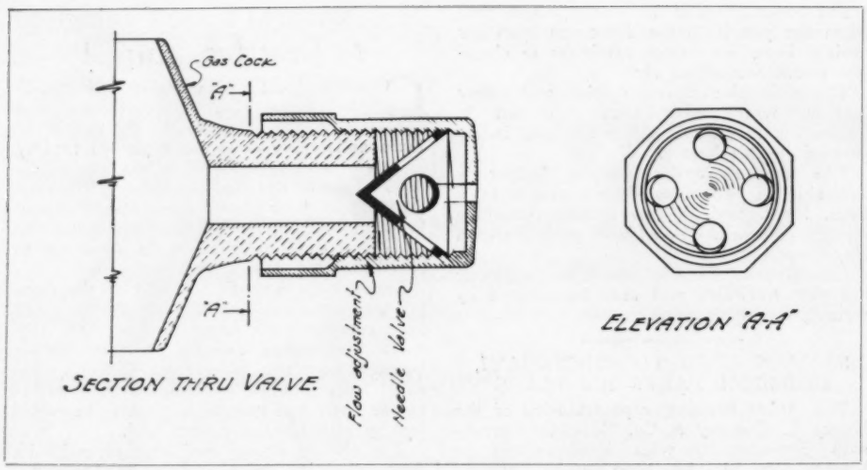
RAILROADS OFFER REDUCED RATES TO TULSA OIL EXPOSITION

Plans are going forward for the International Petroleum Exposition and Congress to be held October 4 to 11 at Tulsa, Oklahoma. Special rates were arranged for on the railroads, at a meeting of transportation company representatives held at Tulsa on July 25. Orders for folders, stickers, window cards, etc., were placed by the railroad men while they were in attendance at the meeting.

The American Railway Express Company is distributing a four-page folder over Europe and the Far East, suggesting an itenerary for a trip from world ports to the United States, and including a stay of eight days at the Exposition.

FRANCHISE TO PECOS VALLEY GAS CO. AT DEXTER, N. M.

Dexter, New Mexico, has granted a natural gas franchise to the Pecos Valley Gas Company, which maintains headquarters in Artesia.



Patent Applied *for on* New Design Gas Burner Spud

Patent applicantion has been filed at the United States Patent Office, by W. G. Russell on a new design for a gas burner spud. The inventor states that the new design increases the mixture of primary air, thereby giving a higher degree of combustion resulting in increased heat. Design of the new type spud is shown in the sketch above.

WORTHINGTON CO. INTRODUCES THE MULTI-V-DRIVE

Worthington Pump & Machinery Corporation, Harrison, N. J., has placed the Multi-V-Drive on the market. This drive consists of a number of endless molded V-belts running in V-grooved sheaves. It combines a new type of rubberized cord V-belt, impervious to dust and moisture, with an improved V-grooved sheave.

Goodyear Emerald Cord Belts are used in the new Multi-V-Drive combine. The load-carrying members are cotton cords arranged in parallel lines, concentrated about the neutral axis.

Each sheave is grooved, machined and finished so that the grooves present a smooth surface on which the belts run. The wedging action between the belts and the grooves results in a grip which compensates for, but differs from, initial belt tension in a flat belt drive.

The new drive is described in Bulletin L-400 B-1, which may be obtained by writing to the company.

GREAT NORTHERN RY. SHOPS AT GREAT FALLS USING NATURAL

Conversion of the Great Northern Railway Company shops at Great Falls, Mont., to natural gas is nearly completed by the Great Falls Gas Company. Gas is now being used for babbitting, brass journals, gibbs, solder irons, flanges on tanks, tires, riveting, annealing furnace, welding flues, carbonizing furnace, large billet furnace, and five forges in the blacksmith shop. There are still five forges to be converted.

Work was started at the Great Northern shops on March 1, all of the piping and installation being done by the Great Falls Gas Company on contract under the direction of George H. Kelleway, industrial engineer. The peak load at the shops up to July 5 was 38,000 cubic for 24 hours.

B. C. ELECTRIC RY. CO. COMPLETES VANCOUVER MAIN EXTENSIONS

Gas main extensions on the north shore of Burrard Inlet at Vancouver, B.C., are now being rapidly completed by the B.C. Electric Railway Company's gas department. The trunk line represents approximately 3½ miles of pipe. From this main, laterals will be extended in all directions according to the number of customers.

Work on the preparation of the high pressure gas holder, close to the Second Narrows bridge, has been completed, and all the preliminary work being over, erection of steel is commencing.

FLOYD NORGEN LEAVES GAS SERVICE CO. SUBSIDIARY

Floyd R. Norgren, formerly assistant new business manager of the Gas Service Company in Kansas City, has been placed in charge of organizing a direct service station sales department of the Cities Service Oil Company of Delaware. Mr. Norgren's headquarters are to be in Tulsa, Okla.

Besides Mr. Norgren, two men were selected for similar work from the Kansas City Gas Company sales organization, Bill Orr and George Glaskin.

Mr. Norgren came to the Gas Service Company from the Cities Service property at Spokane, Wash., in 1925, as assistant new business manager under F. M. Rosenkrans. In three years he was transferred to the Customer-Ownership Department of Henry L. Doherty & Co. as traveling representative. Early in 1929 he was made new business manager of the Capital Gas and Electric Company at Topeka, Kan.

$200,000 LINE TO BE LAID TO POINT NEAR TOOELE, UTAH

Construction of a line to supply natural gas to the International Smelting Company's plant near Tooele, Utah, is expected to begin immediately, according to J. D. Roberts, vice-president of the Wasatch Gas Company. The line is being extended from the company's line to Garfield, and forms a part of the system which is supplied from the Wyoming gas fields. The line to Tooele will cost about $200,000. The completion date is given as October 1.

Replacement Program *for* Council Bluffs Gas Co.

COUNCIL BLUFFS GAS COMPANY, a unit of the Texas Cities Gas Company group of the Lone Star Gas Corporation, has announced plans for the laying and replacing of approximately 24 miles of main within the city, according to announcement made at Council Bluffs by Emmet Tinley, counsel for the company.

The program includes the enlargement of certain mains within the city, extensions to sections not now served and the supplementing of all mains with high pressure lines. Actual construction work on the program will begin during August, with the completion date announced for three months later. Approximately 300 men will be employed in the construction work.

A total of 16,150 feet of 8-inch pipe will go into the construction program, as will also 7,650 feet of 10-inch, 13,100 feet of 12-inch and 600 feet of 16-inch. Low pressure system to be laid includes 16,500 feet of 4-inch, 70,400 feet of 6-inch and 8,600 feet of 8-inch.

The construction program of the company is to also include the rebuilding of a 500,000 cubic feet gas holder which was recently destroyed.

H. C. Morris, president of the Dallas Gas Company is president of the Texas Cities Gas Company of which the Council Bluffs company is a subsidiary.

JANITROL SUMMER ADVERTISING CAMPAIGN ANNOUNCED

A campaign stressing the fact that summer is the logical time to plan the conversion of house heating systems to gas is being conducted by The Surface Combustion Company of Toledo, Ohio, in the interest of the company's Janitrol division.

The campaign has as its theme "Carefree Summer Days, Why Not Carefree Winter Days?" and consists of suggestions for newspaper advertising, window display and direct mail.

The folder containing the campaign will be mailed by the manufacturers upon request.

There is also available for mailing to gas companies the new Janitrol house heating catalog, listing the line of conversion burners manufactured by the company.

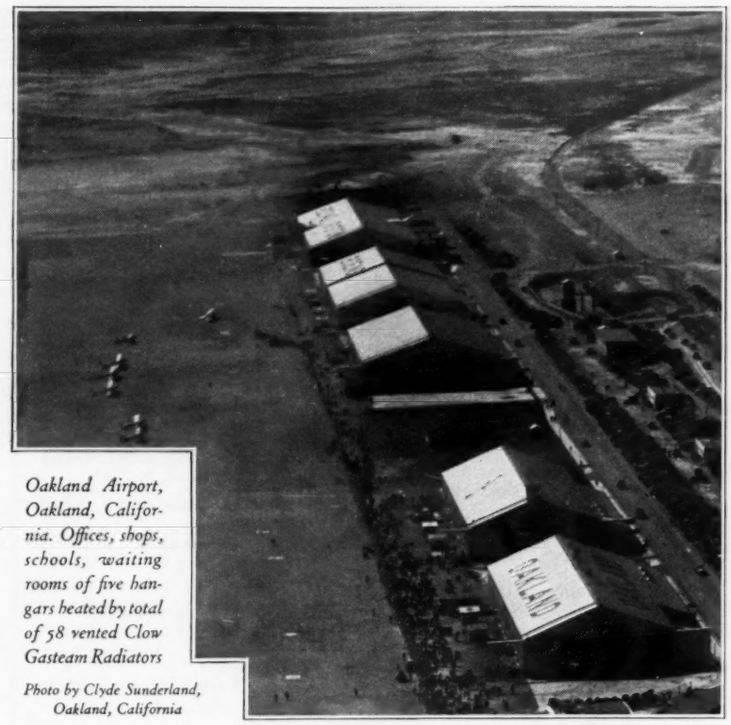
This attractive three-color catalog contains information on house heating and is designed for use by gas company executives.

SWEETGRASS, MONT., NATURAL GAS SERVICE IS RESUMED

The Consumers Gas Company, holder of the gas franchise in Sweetgrass, Montana, resumed service July 1 after having been shut off from the supply for almost a month. The company formerly took its supply from a well on the Canadian side of the new Red Coulee border field but is now getting it from a well on the American side of the same field. The present supply is estimated at 10 times the demand of the city.

EASTERN DISTRIBUTOR APPOINTED BY JOHNSON GAS APPLIANCE CO.

Johnson Gas Appliance Company of Cedar Rapids, Iowa, has entered into a contract with the Eastern Service Company of Boston, Mass., for the representation of Johnson gas appliances throughout the east. R. M. Henshaw, formerly eastern representative for the Cedar Rapids company, will be connected with Eastern Service.



Oakland Airport, Oakland, California. Offices, shops, schools, waiting rooms of five hangars heated by total of 58 vented Clow Gasteam Radiators

Photo by Clyde Sunderland, Oakland, California

FOR
ANY JOB
ANY SIZE
ANY LOCATION

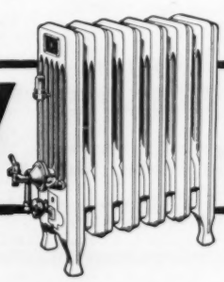
USUAL OR UNUSUAL

The market for gas sales with Clow Gasteam Radiators is wide and rich. Hundreds and hundreds of all kinds of installations—usual and unusual—large and small—north, south, east, west—bear witness to this fact. Above is illustrated just one of the more unusual type of heating job where Clow Gasteam is proving a success, and providing a steady load for gas companies.

Economical to install and operate. Virtually everlasting. Each radiator is a self-contained heating unit, using gas for fuel. *Your* company will find this proven heating system well worth your consistent selling effort.

JAMES B. CLOW & SONS 201-299 N. Talman Avenue, Chicago

CLOW GASTEAM



Listed by Underwriters Laboratories

Approved by A. G. A. Testing Laboratory

120 Per Cent Market Gain *for* Liquefied Petroleum Gas

the extension of distribution systems from nearby centers. Propane, butane, and pentane have been used for these purposes.

The first plant employing the butane-air carburetion process began operations at Linton, Ind. in June, 1920. By the close of 1929, similar plants were operating in Sheridan, Ind.; Calais, Me.; Watertown, S. D.; Mapletown, Iowa; Harrisonburg, Va.; and North Manchester, Ind. At the end of May, 1930, additional plants were operating in Moorpark, Cal.; Shenandoah, Iowa; Cleveland, Tenn.; Kerrville, Texas; Hendersonville, N. C.; Sheldon, Iowa; Harrisburg, Ill.; and Chadron, Nebr.; while similar plants were under construction in Clarinda, Iowa; Columbia, Tenn.; Maryville, Tenn.; Eldorado, Ill.; Murfreesboro, Tenn.; Onset, Mass.; Maryville, Mo.; Goodland, Kans.; Missouri Valley, Iowa; Bath, Me.; Moultrie, Ga.; Bemidji, Minn.; and Chisholm, Minn. Plans for the extension of similar service to a number of communities in California have been announced. The experience gained in piping propane-vapor to small groups of houses has been applied to distribution systems for communities which are not suitable for the profitable operation of butane-air carburetion plants.

INDUSTRIAL USES

Liquefied petroleum gases also have been applied to a number of industrial purposes. Several industrial plants have installed butane storage equipment as a standby to guard against the interruption of their normal fuel supply. Propane is being used as a fuel to heat the adsorbers in iceless automatic refrigeration cars and its use in a somewhat similar way for cooling railroad passenger cars has been suggested. In the metal and allied industries, liquefied gases are being used for heat treating, hardening, annealing, gas carburizing, enameling, core baking, metal cutting, forging and similar operations. In commercial laundries, these gases are used for operating collar and cuff pressing machines, mangles, hand irons and washing machines, while in the food industries, they have been applied to the canning of milk, fruits and vegetables and the roasting of coffee and peanuts.

In school, industrial and hospital laboratories, propane is being used for operating burners, hot plates and sterilizers and, in industrial plants, for heating soldering irons, bench furnaces, for heat treating small tools and for melting of soft metals, such as copper, brass, bronze and lead. Other industrial applications include glass annealing and the burning of ceramic ware; for singeing, drying and heating calendar rolls in textile mills; for heating type-melting pots in printing plants; glass blowing and working; carbonizing radio tube plates; lead burning and the production of distilled water at battery service stations; as a refrigerant in gas-fired refrigerators; for pilot lights on oil and pulverized coal burners; for paint-burning; for incubator heating and egg candling; pre-heating for welding; and the operation of heavy-duty cooking equipment in hotels, clubs, restaurants, road stands, dining cars and boats. The industrial application of these liquefied gases is being extended continually through experimental studies.

Producers and Distributors of Liquefied Petroleum Gases (As of January 1, 1930)

Following is list of marketers of liquefied petroleum gases, including the location of

(Continued from Page 29)

main and branch offices, territory served and date on which distribution was begun—as compiled by E. B. Swanson in connection with the marketed production survey reported above. The first part of the list includes the companies which, wholly or in part, market liquefied petroleum gases of their own manufacture, while the second part includes the companies which market gases purchased from one or more of the manufacturing companies listed.

PART I—PRODUCERS

Bradford Gasoline Company, Bradford, Pa.
(See The Nugas Corporation, under distributors, for other data.)

Carbide & Carbon Chemicals Corporation, Carbide & Carbon Bldg., 30 East 42nd St., New York, N. Y.
Trade Name—"Pyrofax."
Sale of product started in 1924.
Territory served: All States.
Branch offices in Boston, Mass., Chicago, Ill., Cleveland, Ohio, and San Francisco, Calif.

Hope Construction & Refining Co., 545 William Penn Way, Pittsburgh, Pa.
Trade Name—"Hope Bu-Tane."
Sale of product started January, 1920.
Territory served: Pennsylvania, Ohio, New York, West Virginia, Indiana, Illinois, Minnesota, Michigan, and New Jersey.

Lone Star Gas Company, 1915 Wood Street, Dallas, Texas.
Trade Name—"Stargas."
Sale of product started July 1, 1929.
Territory served: Texas.

The Mars Company, Oil City, Pa.
Trade Name: None.
Sale of product started May 15, 1928.
Territory served: Sells to distributors operating in Eastern States.

Philfuels Company, 7-101 General Motors Bldg., Detroit, Mich.
Trade Name—"Philgas" "Philfuel."
Sale of product started in 1927.
Territory served: Connecticut, Florida, Indiana, Iowa, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Nebraska, New Jersey, New York, North Carolina, Ohio, Rhode Island, South Dakota, Virginia, Wisconsin, and Ontario, Canada.

Shell Oil Company, Shell Building, San Francisco, Calif.
Trade Name—"Shellane."
Sale of product started August 1, 1929.
Territory served: California, Arizona, and Nevada.

Shell Petroleum Corporation, 13th and Locust Sts., St. Louis, Mo.
Trade Name—"Shellane."
Sale of product started January, 1929.
Territory served: Minnesota, Wisconsin, Iowa, Illinois, Indiana, Michigan, Oklahoma, and Texas.
Branch offices in Chicago, Ill., Madison, Wis., Austin, Minn., and Lansing, Mich.

Skelly Oil Company, El Dorado, Kansas.
Trade Name—"Skelgas."
Sale of product started May 19, 1928.
Territory served: Arkansas, Illinois, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, Oklahoma, and Wisconsin.
Branch offices in Chicago, Ill., Des Moines, Iowa, Kansas City, Mo., Minneapolis, Minn., Omaha, Neb., St. Louis, Mo., Tulsa, Okla.

The Sloan and Zook Company, Kane, Pa.
Trade Name—None.
Sale of product started about 1916.
Territory served: Wholesale distributor in Pennsylvania and Western New York.

Standard Gasoline Company, 225 Bush St., San Francisco, Calif.
(See Standard Oil Company of California, under distributors, for other data.)

Viking Gasoline Corporation, Charleston, West Virginia.
(See Viking Realty Company, under distributors, for other data.)

PART II—DISTRIBUTORS

The Blueflame Gas & Range Co., Toledo, Ohio.
Sale of product started October, 1929.
Other data not submitted.

Carolina Suburban Gas Company, Greensboro, N. C.
Trade Name—"Philgas."
Sale of product started June, 1928.
Territory served: North Carolina, southern Virginia, and northern South Carolina.

Citigas Corporation of New Jersey, 2931 Atlantic Ave., Atlantic City, N. J.
Trade Name—"Citigas."
Sale of product started March 5, 1929.
Territory served: Atlantic, Cape May, Cumberland, Salem, Gloucester and Camden Counties, New Jersey. Maintains four branch warehouses.

Delco-Light Company, Dayton, Ohio.
Trade Name—"Delcogas."
Sale of product started July 16, 1929.
Territory served: All States east of the Rocky Mountains.
Maintains six warehouses and 35 district offices.

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*Economy Bottled Gas Co., Miami, Florida.

Fuelite Natural Gas Corp., 705 Main St., Waltham, Mass.
Trade Name—"Fuelite."
Sale of product started 1924.
Territory served: All of New England and and part of New York.
Branch office at 33 Dwight St., Springfield, Mass.

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*Grand Rapids Welding Supply Co., Inc., Grand Rapids, Mich.

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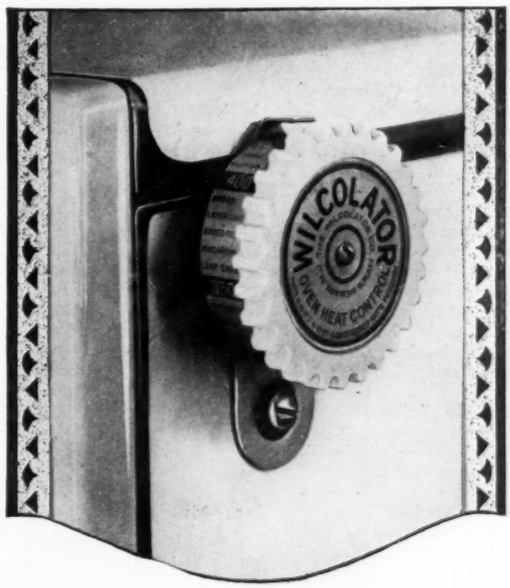
*Hi-Heat Gas Company, 21 East 40th St., New York, N. Y.

Imperial Gas Company, Long Beach, Calif.
Trade Name—"Rockgas."
Sale of product started November 25, 1925.
Territory served: California, Oregon, Wahington, Nevada, Arizona, New Mexico, British Columbia, and Hawaiian Islands.



The WILCOLATOR *best* meets the big demand for Color and Beauty

NOW you can have the Wilcolator with a *colored dial* to match the range trim. Just the added touch of color where it will have the best sales effect.

This is one reason why manufacturers and distributors of the finest ranges equip their products with the Wilcolator. They know the increasing importance of beauty and color in selling. They know that the Wilcolator has always been the easiest control to merchandise.

Another reason so many Wilcolators are used is because the Wilcolator sets so close to the oven side. No bulky parts that extend over the cooking top to interfere with the cooks' work or that are hard to keep clean. And the exclusive cooking chart on the dial. A feature pioneered by Wilcolator and limited to the Wilcolator Oven Heat Control. The most valuable contribution to the sale of heat controls since their inception.

The concealed rod and tube Wilcolator with the colored dial offers merchandising possibilities never before available. Write us for further details.

THE WILCOLATOR COMPANY, Newark, N. J.

Specialists in Temperature Control for Household Appliances

Northwestern Blaugas Company, Hampden Avenue and Charles St., St. Paul, Minn.
Trade Name—"Blaugas."
Sale of product started July, 1921.
Territory served: Minnesota, Wisconsin, Illinois, North Dakota, South Dakota and Michigan.

The Nugas Corporation (Also Bradford Gasoline Company). Bradford, Pa.
Trade Name—"Nugas."
Sale of product started August 17, 1922.
Territory served: New York, New Jersey, Pennsylvania, Connecticut, Massachusetts, New Hampshire, Vermont, Rhode Island, Maine, Georgia, Delaware, Maryland, and District of Columbia.

The Ohio Valley Oxygen Co., 946 Kenyon Ave., Cincinnati, O.
Trade Name—"Philgas."
Other data not submitted.

Omaha Blaugas Company, Inc., 28th and Boyd Sts., Omaha, Neb.
Trade Name—"Blaugas."
Sale of product started December, 1927.
Territory served: Iowa, Nebraska, Kansas, Missouri, parts of Western Illinois and Eastern Colorado.

Pittsburgh Thermoline Co., 45 S. 20th St., Pittsburgh, Pa.
Trade Name—"Thermoline."
Sale of product started 1918.
Territory served: East of Mississippi River.
Branch offices at Philadelphia, Pa., Cleveland, Ohio, Greenwich, Conn., Indianapolis, Ind., and Chicago, Ill.
*The Propane Corporation, Erie, Pa.

*Rockgas Products Company, Emsworth, Pittsburgh, Pa.

Standard Oil Company of California, 225 Bush St., San Francisco, Calif.
Trade Name—"Standard Flame."
Sale of product started December 15, 1928.
Territory served: California, Nevada, Arizona, and parts of Utah and Oregon.

Suburban Gas Company, Belleville, N. J.
Trade Name—"Suburban Gas."
Sale of product started Jan. 1, 1929.
Territory served: All of New Jersey, north of a line from Camden to Asbury Park, and Orange and Rockland Counties of New York.

Super-Fuel Company, 36th St., and 13th Ave., Tampa, Florida, P. O. Box 2172.
Trade Name—"Philgas."
Sale of product started January 1, 1928.
Territory served: Florida.

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*Tirrill Gas Machine Corp., 50 Church Street, New York, N. Y.

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*Universal Bottled Gas Co., Rochester, N. Y.

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*Vapyre Corporation, Pleasantville, N. Y.

Viking Realty Company, Charleston, West Virginia.
Trade Name—"Tru-Gas."
Sale of product started February 6, 1928.
Territory served: Ohio.

*Data regarding operations not submitted.

A Chain *of* Model Gas Kitchens

(Continued from Page 35)

Newspapers and civic leaders generally, regard the model kitchens as a civic asset and they are referred to editorially in this vein. Noted domestic science leaders single out the company's kitchens in their own newspaper articles and radio talks concerning matters of particular and helpful interest to women.

The first kitchen to be installed was in Monrovia. Prior to the opening, two "previews" were given, the first to the editors of newspapers in the Monrovia district, the second to the presidents of women's organizations in the district. In connection with these previews each group was entertained at luncheon by District Manager Walter E. Keefe. Each preview, of course, was handled as news by all the papers and helped greatly to stimulate general interest in the public opening and dedication. Somewhat the same procedure was followed in connection with the opening of other kitchens.

The floor plan shown here is that of the model kitchen at Santa Ana. This plan and the photograph of course, do not indicate the harmonious color combinations in tile, paint, window drapes, floor coverings, etc. One of the features in the Santa Ana kitchen, built in at the suggestion of Manager C. E. Rutledge, is a separate drain pipe beneath the sink, and leading from the gas refrigerator. By careful demonstrating the amount of water used in connection with the operation of the refrigerator, the gas company employees are well able to meet competitive arguments based on the expense and the waste of water, since the small amount of the flow can be seen by the prospect himself.

Managers J. C. Gilbert at Santa Monica, with W. G. Rich at Whittier, join the Messrs. Keefe and Rutledge in affirming the value of the model kitchens, both from the standpoint of public relations and sales.

The relative size of the kitchens as compared with the remainder of the company's display floor is as follows:

	Kitchen Area (Feet)	Remander of Display Floor
Monrovia	20 x 18	40 x 20
Santa Ana	19 x 18	50 x 36
Santa Monica	22 x 17	44 x 32
Whittier	18 x 16	36 x 30

All of the kitchens are visited by women of other communities, who have heard through newspaper publicity and by word-of-mouth from other women who have visited our offices, about the beauty and the conveniences which have been built into them. To such visitors, as well as to local women, an invitation is extended to visit the other model kitchens. The entire world today is more or less awheel, and auto trips of 100 miles or more are the rule rather than the exception in most families. Each kitchen, therefore, attains more than local influence, and to those interested in home building or kitchen modernizing the company's several kitchens offer a selection of good designs. Ideas developed by the architect and builders are being adopted in hundreds of kitchens, both old and new, in the communities which the company serves.

Summing up the general results which we have observed, we find that the model kitchens are serving to elevate the character and the attractiveness of the kitchen in the home, and that housewives, given a fresh interest in cooking, through the use of recipes which they have received and tested at the company's offices, proceed to make additional use of their own ranges or refrigerators. Inspired by the modernity of the new type gas appliances, they buy better appliances for their own homes—and usually from our company sales floor. The value of the kitchens from the public relations angle is also great, and many in our organization believe that it is even greater than the purely merchandise or load building factor.

The innovation has proved so successful that the company plans to extend the idea, especially in the building of new offices in the larger communities.

PLANS FORM FOR LINE TO SERVE W. NEBRASKA AND KANSAS

The Public Service Corporation of Nebraska has announced plans to construct an 18-inch line from the Texas Panhandle to Bridgeport, Neb., a distance of 422 miles, according to recent mid-west news dispatches. It is estimated that the line would cost $15,000,000. The route would traverse western Kansas and western Nebraska, serving 54 towns. A major lateral would be constructed to Guernsey, Torrington and Wheatland.

Thomas Cook and R. E. Underwood of Amarillo, Texas, representatives of the company, are carrying on franchise activities in the area, having applied for permits to service natural gas in Mitchell and several towns in the Platte Valley, as well as some Wyoming towns.

IMPROVEMENTS ANNOUNCED IN RUUD WATER HEATERS

The Ruud Manufacturing Company of Pittsburgh announces the following new features on the company's Ruud-Autocrat automatic water heater:

1. Pilot lock—This new safety control makes necessary the opening of the pilot valve before the main burner gas supply can be turned on.

2. Pilot adjustment—Pilot adjustment is now obtained by regulating the needle valve which, once set, is capped to prevent tampering.

3. Tanks—Tank test standards have been raised.

4. Brass parts dipped—Ruud-Autohot brass parts are now dip-finished.

5 New gas line—The main gas supply line has been straightened, a hard seamless brass pipe replacing the offset copper line.

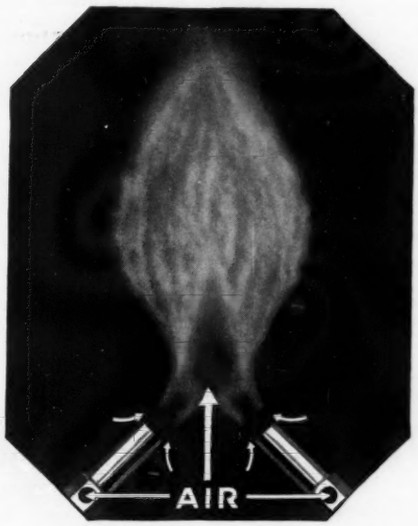
6. Seamless draft-hood—The Ruud-Autohot draft-hood is now spun to shape, without seams, from a metal disc.

MONTANA-DAKOTA POWER CO. INSTALLING WIBAUX SYSTEM

The Montana-Dakota Power Company is installing a distribution system in Wibaux, Montana, for natural gas. October 1 is specified in the franchise as the date on which service is to start. Gas will be supplied from the Bismarck line.

THE DUAL REQUIREMENT OF EFFICIENT GAS HEATING

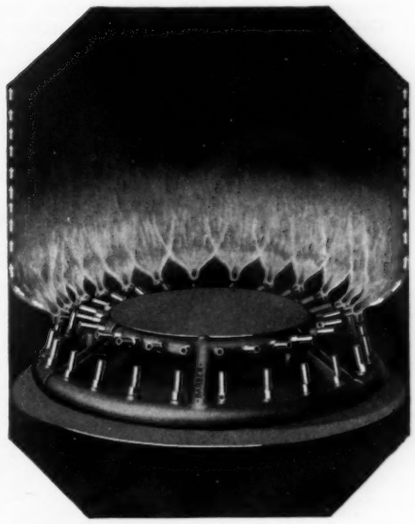
· MAXIMUM HEAT ·



→← Indicates where necessary air is taken in to mix with gas to develop perfect combustion at varying gas pressures.

THE perfect combustion or burning of gas is dependent upon its union with a proper amount of oxygen as may be extracted from the air. The BARBER PATENTED JET PRINCIPLE accomplishes perfect combustion, liberating all the heat contained in the gas you buy.

· PROPERLY APPLIED ·



↑ ↑ Barber Patented "Scrubbing" flame application to heater side walls—direct—no loss of heat.

YOU put a tea kettle DIRECTLY above the gas flame if you wish it to boil quickly. You know that reflecting heat on it would be inefficient. Note that the Barber Gas Burner applies the heat DIRECTLY where it is required and is absorbed. . . . . .

List Price $98.50

BARBER CONVERSION GAS BURNERS are made for all styles and sizes of furnaces, boilers and heating appliances. Complete data and latest prices are given in our new Catalog No. 30.

for the NEW BARBER BURNER No. 324-A, automatic and fully equipped—a price that opens up an immense new conversion market. It will allow hundreds of homes in your community to heat economically with gas. Write for our new sales folio, "More Gas", which contains the complete Barber story.

THE BARBER GAS BURNER CO.

FORMERLY THE CLEVELAND GAS BURNER AND APPLIANCE CO.

3702 SUPERIOR AVENUE + + CLEVELAND, OHIO

Line Construction *in* New Mexico

(Continued from Page 36)

ington, is the uppermost shipping point on the line, La Ventana and Alameda being the second and third shipping points. La Ventana lies in the Nacimiento Mountains, one of a group of broken sierras extending southward from the Colorado line, and is the nearest railroad town to the mid-point of the line.

An airplane was used in conducting the survey for the line. The plane was first flown over the area to aid in selecting the best route. In a second trip, made in a direct line over the route, three-prong aerial survey stakes resembling small hat stands, were dropped from the plane, which flew at an altitude of from 50 to 100 feet. Ninety-nine out of every 100 survey stakes stuck in the ground, according to those in charge of this phase of the work. Rags about a foot in length, tied to the top of the stakes, provided an excellent marker for the surveyors who followed along over the course of the line.

Southern Union has found it necessary on this project to construct more than 50 bridges spanning large arroyos and canyons. These bridges range from 10 to 150 feet in length. In constructing the bridges piling was driven for the sake of giving permanence to the job.

The Kutz canyon crossing was the most difficult. Here, instead of bridging the canyon, the sides were leveled away to provide passage-way for the line.

A special pipe protective was used on the line across the Kutz canyon. This consisted of a paint job, followed by a burlap wrap and another coating of paint. Elsewhere on the line paint was the protective used.

In constructing the road-way between Farmington and Albuquerque, it was planned to keep the actual construction of the road about 15 miles ahead of the pipe stringing gang.

There is a difference of 45 degrees in temperature at this time of year through the New Mexico section, between the days and nights, with the thermometer reaching 100 degrees in the day time and 55 degrees at night.

The altitude on the line ranges from 5000 feet at Albuquerque to about 7100 feet at Santa Fe.

This variance of temperature has made it necessary to lay the pipe in units, connecting the units at night, following the contraction of the pipe. Under this plan 500 feet of pipe was connected and lowered into the trench in the day time. The next 150 foot unit was left at the side of the trench to be lowered at night. The line is acetylene welded except at points across exceedingly rough country, where Dresser couplings are used. All bends on the line are cold bends.

The new Lindeweld process was used in the welding of the line, and engineers state that it represents approximately a 40 per cent saving over the old Linde method. By the new technique three welds were made on the 12-inch line in an hour, as against one weld in an hour by the old process.

The 12-inch pipe, arriving in 20-foot lengths, was welded into 40-foot lengths as it was unloaded onto the racks.

About 500 laborers are at work on the project, a majority of them being Navajo Indians. Mexican labor and white labor is also employed. Of the latter group a considerable number are college men, following the company's policy of hiring these men for the summer vacation period. The Indian laborers are secured through a government Indian agency. An interesting fact about the Navajo laborers is that they prefer to sleep under the stars, rolled-up in a sheep skin blanket, rather than to sleep in the more luxurious surroundings provided by tents and bunk houses which are utilized by the other laborers.

Three ditching machines are at work on the line, and 30 very low geared 3½-ton trucks are used in stringing the pipe. About 50 teams are also utilized on the line, chiefly in connection with laying the road-bed, which is the only road in existence between the gas fields and Albuquerque. A telephone line has also been constructed the full length of the line by the Southern Union. Holes for the telephone poles were driven with a post-hole digger which operated with power created by a tractor.

A special machine was used for boring under highways and under railroad crossings. The machine, which is also applicable to boring under concrete, was designed by engineers of the Southern Union, and patents are now pending on it. It functions similarly to a rotary drilling machine, but operates horizontally.

After reaching a point north of Albuquerque and Alameda a branch of the line will extend north and east toward Santa Fe and Las Vegas. The survey for the line has been extended as far as Las Vegas, and the town plant is now being brought to completion at Santa Fe. The branch of the line extending southward to Albuquerque will continue in this direction to Las Lunas and other towns south of Albuquerque.

The Albuquerque Natural Gas Company, which operates the Mesa Gas Company and the Durango Natural Gas Company, both of Colorado, will operate the New Mexico line, and will distribute gas in the towns where franchises are held, through the Southern Union Gas Company of New Mexico, a subsidiary.

Gas *in* Oil Tool Manufacture

(Continued from Page 33)

the mould, loaded on small cars (a narrow gage railway threading through all parts of the plant), and weighed on a set of track scales. After weighing, the cars continue with their load of ingots to the large "continuous" type furnace.

Placed on a roller type conveyor, the ingots are carried before a "pusher" which "pushes" them into the heavy barrage of heat, very little if any flame being visible on account of a practically perfect mixture of gas and air at the burners. The gas entering at the rear of the furnace plays an incandescent wave of heat over and against the metal being heated. This giant furnace has a capacity of 100 tons of metal per 10-hour day.

The ingot, heated to a fiery red in this furnace, is "pushed" through the furnace into a "V" shaped trough along the bottom of which a cable "pusher" shoves the hot metal to the rolls for the first pass.

This glowing piece of metal is then put through a picturesque procedure as it is passed and re-passed through a series of rolls. These first rolls, known as "roughing" rolls, reduce the metal strip in size and elongate it. Continuing through a series of "finishing" rolls the metal is now "strechED" or "rolled" to a length of from 40 to 70 feet and from ¼ to 1 inch in diameter, depending on the size of bar desired.

The still red-hot bar is now allowed a brief respite on the "cooling bed" before being sheared to exact desired length with a huge pair of "alligator" shears.

The next step in this process is the heating of the rod ends so that they may be formed to A.P.I. Standard, being then placed in the forging furnace and heated to forging temperature (2000° F.), then placed in a forging machine, the ends upset for re-enforcing and so that they may be threaded.

The heat treating furnace, under pyrometric control and with natural gas again proving its flexibility, first slowly heats the rods to a temperature of 1550° F., the heated ends of the rod then being quenched in water.

It is now necessary that the rods again go through the same furnace, this time being re-heated to a temperature of 900° F. and allowed to cool in air, this being described as the "drawing" process.

The turret lathe now threads the rod to A.P.I. standard, the A.P.I. master gage being used to check this work. Another feature worthy of mention is the accuracy maintained in the rolling mill, where .005-inch limits are maintained.

The Texas Steel Company has a fatigue resistance machine as an important unit in its equipment, a unique test being made on sucker rod samples from each "heat" of rods manufactured, in order to hold the product up to standard.

The rods to be tested are placed in this machine and put through about 50 flexures per minute, the rod being compressed 1¼ inches and elongated ¼ inch. The flexures are continued until the destruction of the rod is accomplished, which is usually in the neighborhood of 25,000 flextures.

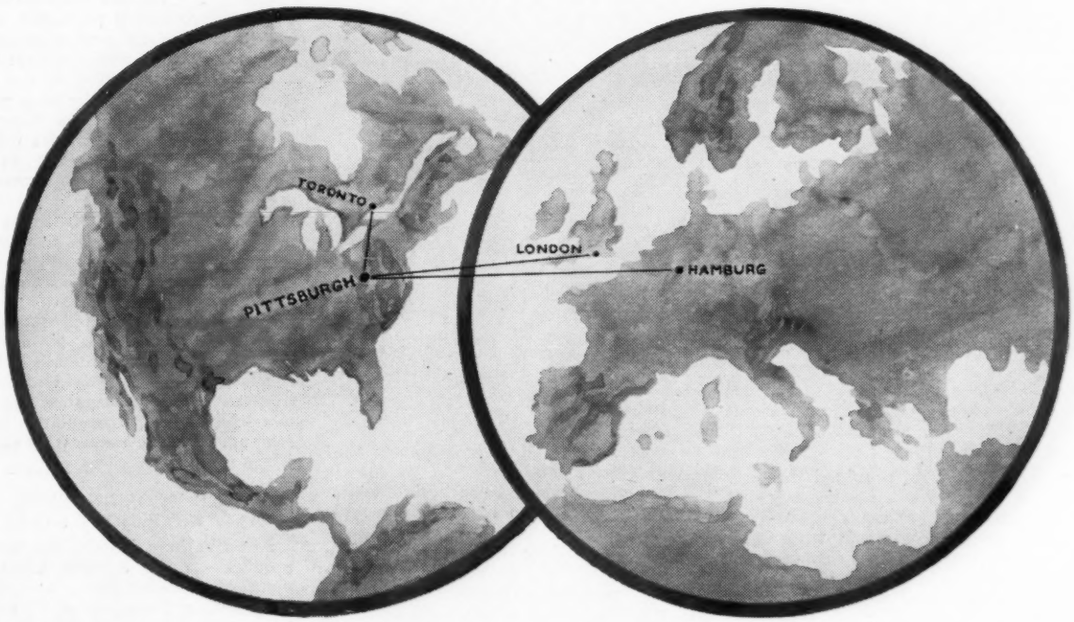
A few side lights on this major steel plants' operations are in order in conclusion of this article.

An additional gas-fired furnace is used in the carburizing or case-hardening of the couplings used in holding the sucker rods together. Various other gas-fired furnaces are used in the manufacture of bull plugs, swedge nipples, castings for pump jacks, pull rods, etc.

The sucker rods manufactured at this plant are shipped not only to the Mid-Continent field but are distributed throughout the world, wherever oil is produced and used in pumping oil wells of 2000- to 7000-foot depths.

Over 15,000 tons of steel re-enforcing bars are also shipped during a period of one years' operation, natural gas playing its usual vital part in their manufacture.

RUUD-AUTOHOT



The World Has Been Its Proving Ground

1. *Pilot Lock*
2. *Pilot Adjustment*
3. *Improved Tank*
4. *Brass Parts Dipped*
5. *Hard Brass Gas Line*
6. *Seamless Draft Hood*
7. *Improved Leg Bracing*

The RUUD Small Home Twins

In the ultimate of all tests . . . . actual and everyday use . . . RUUD engineers have watched and checked the operation of the RUUD-AUTOHOT Automatic Storage Water Heater in the United States, Canada, England, Germany, Holland, Norway, Russia, Japan . . . . in *every gas-served country*.

All agree that its structural principles are correct, but from their wealth of experience drawn from actual observation, new and striking improvements have come to light that are now made a part of a new, finer RUUD-AUTOHOT.

Thus to you, through this internationally-famous name, comes renewed assurance of a water heater value never before equalled . . . . *now made greater*.

RUUD MANUFACTURING COMPANY
Pittsburgh, Penna.

H. R. BASFORD COMPANY, Representatives
665 Howard Street, San Francisco, California
911 S. Grand Avenue, Los Angeles, California

PORTLAND DENVER DALLAS FORT WORTH
SAN ANTONIO HOUSTON OKLAHOMA CITY
NEW ORLEANS KANSAS CITY ST. LOUIS

HAVE YOU SEEN THE TEN TO ONE MERCHANDISING PLAN? WRITE FOR IT.

You can use
Natural Gas
in furnaces and boilers
now burning other fuels
The P · G · and E · Conversion Plan is easy and inexpensive

One of the billboards used by Pacific Gas and Electric Co. in conversion househeating sales promotion.

P. G. *and* E. Conversion Burner Sales

(Continued from Page 32)

man is required to (1) completely log or gather the data on every prospect in his territory, whether sold or not and (2) call back on every sale after the installation to insure customer satisfaction and to inquire after new live prospects.

Installation inspectors are provided for and are held responsible for a satisfactory job. They are required to (1) make a thorough examination of old equipment before installation; (2) reject defective furnaces and refuse installation; (3) specify size of burner and location on piping and controls; (4) arrange for installation date; (5) make final inspection after the job has been in operation 10 days; (6) place inspection card on the installed burner.

To date the drive has met with outstanding success. The company has estimated that its territory contains 50,000 potential conversion prospects, and the sales quota for the first year has been set at 10,000 installations. At the end of five months 50 per cent of the year's quota, or 5,000 burners, has been sold. These figures are more significant if one bears in mind that the heating season has not yet started. Of these 5,000 installations the company reports that not over 25 complaints have been received after the final okay of the inspection man had been made.

A companion activity that in a measure parallels the central house heating campaign, is the sale of conversion units for the numerous types and thousands of installations of warm air circulators or room heaters. A set of four small burners has been perfected by Mr. Miller, comprising sufficient sizes and styles to convert practically every make of circulating heater in use in the territory.

The market for this small conversion installation is large, and it is estimated that 5,000 will be sold this year. Within the six weeks that the salesmen have been showing the circulator conversion burner, over 1,000 have been sold.

The sales procedure is substantially the same as for the larger conversion units, but there is no inspection call, and the salesman figures the size of burner required when he closes the sale. This is done by applying to the fire box one of a series of light metal plates representing the burner sizes. The installation and the inspection are both made in one call.

In conclusion it should be stated that one of the reasons for the success of the drive to date has been the energy and intelligence displayed by the sales force. Salesmen are working hard and are being paid well for their efforts. The rate of compensation is $125 a month salary plus 15 per cent commission on all sales until September 1. After that date the commission drops to 10 per cent. The additional commission during the summer months is given to stimulate effort to sell installations before the opening of the heating season.

The company feels that by making it possible for salesmen to earn good salaries, it makes it possible for the Pacific Gas and Electric Company to secure and retain good salesmen.

Accounting Standardization

(Continued from Page 30)

make proper surveys of accounting accomplishments and compilations and to recommend the installation of labor saving routines applicable to all the companies or units in a group.

Results of even the most feeble efforts at standardization will be felt in a surprisingly short time. The operating managers, local accounting officers and executive heads will begin viewing comparative statistics with more confidence and a general upbuilding of accounting and operating morale will be noted.

Yardsticks by which operations may be judged immediately assume important proportions when standard accounting becomes effective, as all classes of operations may be made to become more or less related even though they may be far apart in the actual revenue producing lines.

One of the most valuable features of uniformity might be useless to some groups—that is, the economies of a consolidated income tax return, but to any group of companies under a common ownership much effort is saved on income tax statistics by a high standard of uniformity.

Printing cost reductions naturally follow in direct proportion to the effort expended to standardize subsidiary forms, and this may be expedited considerably by the institution of a central stationery department which should be charged with the duty of "uniforming" every possible piece of printing.

Lastly, but not the least important, is the effect on accounting personnel. By engendering in all clerical and accounting forces a clear conception of the uniform practices and a liberal understanding of the standard accounting forms in use by each corporate unit, an interchange of ideas between the employees of various companies will undoubtedly result, thus enhancing the individual values of accounting employees' services to the organization as a whole and assisting in the ironing out of many small divergencies that might otherwise be a source of irritation to the auditing, statistical and executive departments of the management organization. And, too, all large groups of corporations sometimes find themselves handicapped for trained accounting talent familiar with the minute details. If uniformity is practiced to any considerable extent, such troubles will be eliminated automatically, as inter-changes of accountants between local companies can be made with ease.

SURFACE COMBUSTION, WEBSTER AND N.G.E. JOIN SALES FORCES

Effective immediately, the complete line of products of the Surface Combustion Company of Toledo, Ohio, and The Webster Engineering Company of Tulsa, Okla., will be distributed in California, Oregon, and Washington, by Natural Gas Equipment Incorporated, of Los Angeles and San Francisco, in cooperation with the public utilities in the various western cities.

Similarly, the complete N.G.E. line will be distributed through all Surface Combustion and Webster branch offices in principal cities throughout the other states.

Surface Combustion industrial furnaces, burners, and appliances; Janitrol and other types of conversion burners for residence and apartment heating boilers; and Webster radiant gas burners; as well as Wilgus pressure regulators, N.G.E. gas burners, and Anubis differential pressure recorders are the principal products now being delivered through the new channels.

NATURAL GAS CORP., OF OREGON IN FURTHER FRANCHISING

The franchise granted to the Consumers Gas Company of California for service of manufactured gas at Klamath Falls, Oregon, has been transferred to the Natural Gas Corporation of Oregon. The company plans immediate construction of a plant and distribution system for the service of butane gas, rather than manufactured gas, as originally planned.

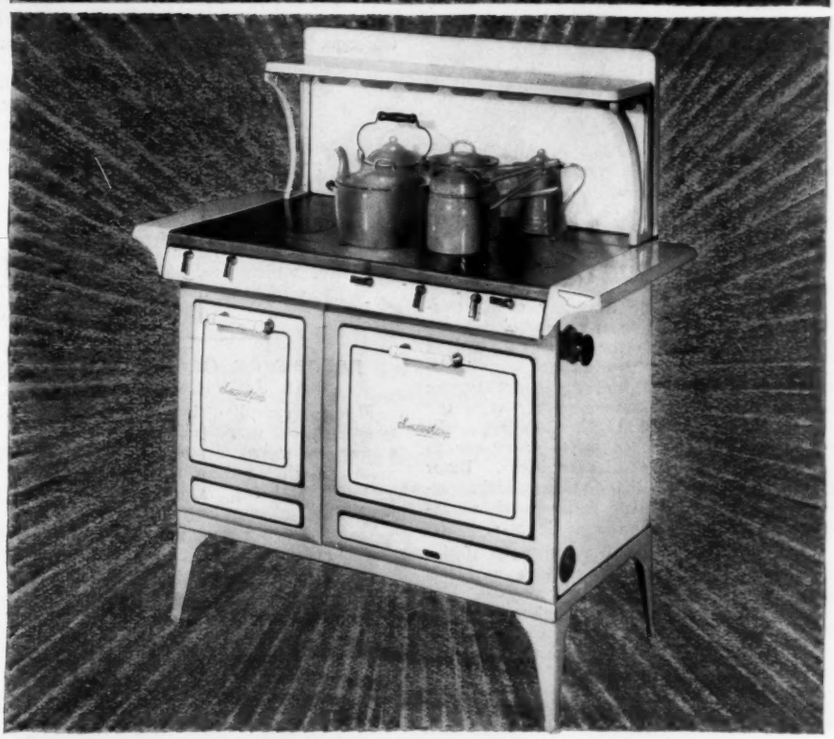
The Natural Gas Corporation of Oregon has also applied for franchises for the service of liquefied natural gas at LaGrande, Newport and Toledo.

F. H. BACON NOW WITH LEGAL DEPT. OF ARKANSAS NATURAL

F. H. Bacon, attorney, of Mount Pleasant, Michigan, has joined the legal staff of the Arkansas Natural Gas Corporation, with headquarters at Shreveport.

THREE NEW MODELS

with Insulated Oven



Smoothtop

GAS RANGE

CAPTURES THE FLAVOR . . . FREES THE COOK

. . . A complete *insulated* line

IN June and July . . . a national magazine advertising campaign with a 3,000,000-circulation punch tells housewives in your territory about Smoothtop's wonderful insulated oven.

Display these marvelous new Smoothtop Gas Ranges on your floor. Tie up with this national interest in insulated ovens by presenting Smoothtops. Let the housewives in your territory see Smoothtop in demonstration . . . see how Smoothtop's insulated oven keeps their kitchen as cool as outdoors . . . see how Smoothtop's 4-heat-zone top cooking adds hours to their leisure.

Get Smoothtop's merchandising portfolio. You will agree it is the most complete and effective plan ever put behind a line of gas ranges.

STANDARD GAS EQUIPMENT CORPORATION • 18 EAST 41st STREET • NEW YORK, N. Y.
Pacific Coast Distributor: Northwest Gas & Electric Equipment Co., Portland, San Francisco, Los Angeles

Wm. Little General Supt. *of* Arkansas Natural

WILLIAM LITTLE, formerly chief industrial engineer for the Cities Service Gas Company, has accepted a position as general superintendent of the distribution properties in Arkansas of the Arkansas Natural Gas Corporation, which includes the Little Rock Gas & Fuel Company and about 40 other properties.

William Little

Mr. Little, who is a native of Georgia and a graduate of the Alabama Polytechnic Institute at Auburn, Alabama, had been associated with the Cities Service Gas Company, as industrial engineer since 1927, and had held the post of chief industrial engineer since 1928.

Prior to joining the company at Bartlesville, Mr. Little had been an industrial engineer connected with the Kansas City Gas Company. Following graduation, with a degree in electrical engineering, in 1919, he was appointed as junior engineer with the Toledo Railway and Light Company. In 1920 he was transferred by the company to Sedalia, Mo., as a results engineer. Later he was appointed as distribution superintendent and industrial and commercial representative for the company at Sedalia.

Mr. Little has assumed his new duties with headquarters at Little Rock and has moved his family to that city.

R. W. Curran, formerly in charge of the Bartlesville Gas & Electric Company, is general manager of the Arkansas properties of the Arkansas Natural.

GREAT FALLS GAS CO. TO INSTALL GAS AT NEW HIGH SCHOOL

The Great Falls Gas Company of Great Falls, Mont., has been notified by the school board of that city that gas will be used for cooking in the cafeteria of the new million dollar high school which was recently completed. Equipment has not yet been specified.

Gas will also be used in the domestic science department, the installation consisting of 32 plates and a cabinet model range with insulated oven and oven regulator; the sheet metal shop; automobile shop; manual training shop; and chemistry and physics laboratories. The building will be ready for use when school opens in September.

HOUSTON PIPE LINE CO. TO HAVE INCREASED SUPPLY OF "NATURAL"

Under an expansion program to increase its natural gas production holdings, the Houston Oil Company of Texas, parent company of the Houston Pipe Line Company, has taken over a block of about 5,000 acres in the new McFaddin gas field in Victoria County, Texas. This field was developed recently by the Lion Oil & Refining Company on the McFaddin ranch.

The acreage purchased consists of tracts in the McFaddin and Fagin ranches, located about 1 mile south of the discovery well. This well now has a daily production of 30,000,000 cubic feet of dry gas.

This new field is located about 15 miles southeast of the trunk line system of the Houston Pipe Line Company, carrying gas to the Houston territory and to the Texas Gulf Coast.

Late in June, the Houston Oil Company completed a good gasser in the Brooks County field. The initial production in this well, the Wormser No. 1, was about 35,000,000 cubic feet of gas daily. Practically all of the surrounding acreage in this district is controlled by the Houston Oil. This company is now producing natural gas in about a dozen of the most productive fields in southwest Texas.

PEOPLES GAS LIGHT & COKE TO BILL FOR "THERMS" USED

Peoples Gas Light & Coke Company of Chicago, Ill., has filed a new rate schedule with the Illinois Commerce Commission, in which the company proposes to bill its customers on the number of heat units used, rather than on the cubic feet of gas consumed. Bills would be figured in terms, which are composed of 100,000 B.t.u.'s. Under the new system consumers could register a choice as to which form of billing they would prefer.

The change is being made because of the effect which future introduction of natural gas will have upon consumption in the Chicago area.

REPORT OF GROSS SALES FOR GAS SERVICE COMPANY

Figures compiled by F. M. Rosenkrans, new business manager for the Gas Service Company, show a gross sale for the six months period ending June 30 amounting to $1,480,152, being approximately $100,000 over the budget set by the company for the period. During the same period in 1929, gross sales amounting to $1,503,375 were made.

House heating sales for the first six months in 1930 totaled 4,876; incinerators, 458; water heaters, 3,415; domestic type ranges, 5,784.

GREELEY GAS AND FUEL MAKES CONTRACT FOR NATURAL GAS

Agreement for the sale of natural gas to the Greeley Gas and Fuel Company of Greeley, Colorado, by the Public Service Company of Colorado, has been made by the company, according to J. T. Coleman, manager of the Greeley utility. Natural gas is expected to be available about September 1, under the new plan. The line will be brought from a point three miles north of Johnstown.

PROVO, UTAH, SYSTEM BOUGHT BY C. L. ALLEN INTERESTS

The C. Loomis Allen public utility interests of New York have purchased the plant and distribution system of the Utah Valley Gas & Coke Company at Provo, Utah, according to press dispatches, and are asking for a franchise in American Fork, near Provo. The company would extend its system to serve manufactured gas to the entire country from Lehi on the north to Payson on the south, if franchises are obtained.

W. R. LINDSAY NOW AT DALLAS FOR REPUBLIC STEEL CORP.

W. R. Lindsay, formerly traveling in the southern territory for Babcock and Wilcox Tube Company, has become associated with the Republic Steel Corporation at the Dallas office of the company. George W. Way has charge of the southwestern office for Republic Steel, maintaining offices in the Republic Bank Building, Dallas.

Convention Program *in* Formative Stage

NATURAL Gas topics will play an important part in the Twelfth Annual Convention and Exhibition of the American Gas Association to be held at Atlantic City, N. J., October 13-17. Merchandising, including both industrial and domestic sales will also be stressed.

The General Program Committee, composed of the following, is whipping program details into shape:

P. S. Young, Public Service Electric & Gas Company, Newark, N. J., chairman; Joe Carmichael, Iowa Committee on Public Utility Information, Des Moines, Iowa; Julianne Doane, The Peoples Gas Light & Coke Company, Chicago, Ill.; E. M. Farnsworth, Jr., Old Colony Gas Company, Braintree, Mass.; F. C. Freeman, Providence Gas Company, Providence, R. I.; D. W. Harris, Arkansas Natural Gas Corp., Shreveport, La.; R. C. Hoffman, Jr., Southern Cities Public Service Company, Atlanta, Ga.; Jacob J. Jones, Bridgeton Gas Light Company, Bridgeton, N. J.; S. W. Meals, Carnegie Natural Gas Company, Pittsburgh, Pa.; E. P. Prezzano, Westchester Lighting Company, Mt. Vernon, N. Y.; A. H. Sikes, Great Northern Gas Company, Sault Ste. Marie, Ontario, Canada; H. Leigh Whitelaw, American Gas Products Corp., New York, N. Y.; H. W. Hartman, Association Headquarters, and K. R. Boyes, Association Headquarters.

SOUTHERN CITIES DISTRIBUTING CO. OPENS NEW OFFICE

Southern Cities Distributing Company of Shreveport, La., celebrated the formal opening of its new quarters in the Ardis Building in that city on July 16. Open house was observed by the company throughout the day.

The Shreveport Times, local newspaper, devoted a 12-page section to the formal opening, giving a resume of the personnel of Southern Cities, and of the Arkansas Natural Gas Corporation, parent company. Offices of both the Southern Cities and the Arkansas Natural are now located in the Ardis building.

Quarters of the Southern Cities are located on the ground floor of the Ardis Building, in space formerly occupied by two companies. These quarters have been remodeled to suit the needs of the company. Simultaneously with the opening of the new office, the creation of a gas appliance merchandising department for the retailing of gas appliances was announced.

Paul F. McBride is general manager of the Southern Cities, Frank S. Kelly is general superintendent, W. J. MacIntyre in charge of industrial development and C. B. Wilson, newly appointed, is new business manager. D. W. Harris is vice-president and general manager of the Arkansas Natural.

REPUBLIC STEEL CORP. COMPLETES SECOND PIPE-MILL UNIT

Republic Steel Corp. of Youngstown, Ohio, is completing a second unit in the company's $8,000,000 electric pipe mill construction program. The first unit has already been placed in operation.

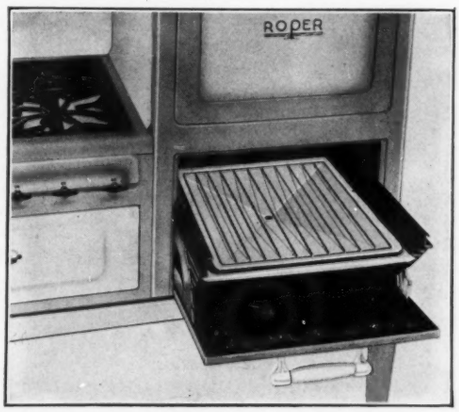
FORT DODGE GAS & ELEC. CO. TO SERVE MANSON, IOWA

Fort Dodge Gas & Electric Company has been granted a natural gas franchise at Manson, Iowa. In the vote cast, 159 favored the franchise and 12 voted against it.

In addition to:

The Roper Oven Chart

A lifetime cooking chart that is burned into the enamel oven door lining of every range equipped with Roper Complete Oven Control, a chart giving the exact time and temperature required for various bakings and roasts.



and—

The Roper Self-Slide Broiler

Another new development by Roper, so designed that broiler pan and rack automatically slide in and out of the oven when the door is closed and opened. A feature available on the many models comprising the 1800 series.

Roper now offers:

The Longest Line of Insulated Ovens Made

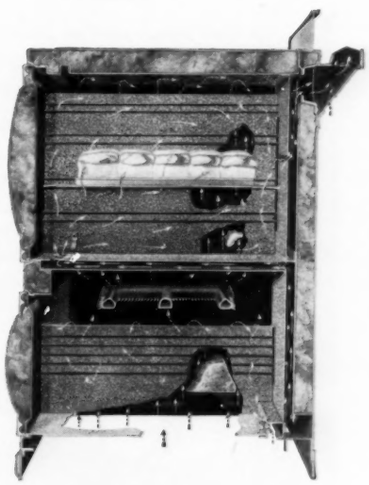
Offering the Roper Insulated Ventilated oven in any size stove down to the smallest and up to the largest built. The Roper system of ventilation, recognized as the best for cooking purposes, now combined with the insulation feature for a cool kitchen and greater oven efficiency.

ROPER

TRADE MARK REG. U.S. PAT. OFF. REG. IN CANADA

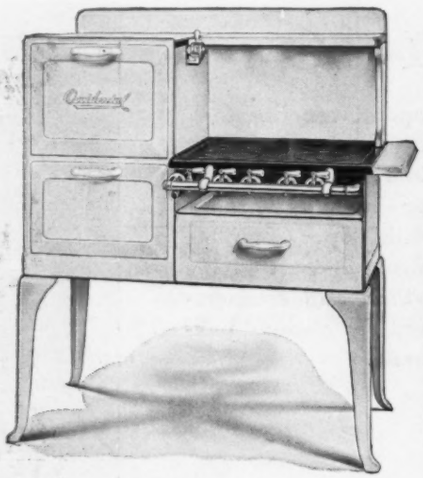
GAS RANGES
GAS FURNACES

George D. Roper Corp., Rockford, Ill.



C. B. Babcock Co.,
135 Bluxome St.,
San Francisco

Local Problems Need Local Treatment



Local problems need local treatment. The entire line of Occidental gas ranges is so designed as to be adaptable to local conditions in every gas community in the West. The "stove top" popular model was originated by Occidental. Now the complete line of beautiful and efficient ranges is available in both open and closed tops, and for natural gas, manufactured gas or tank gas. Only the burners and valves need be changed in converting from one gas to another.

CONVERSION BURNERS

The widespread distribution of natural gas has created a big conversion burner market. Occidental has designed to suit local conditions a complete line of conversion burners suitable for every type of furnace and circulating heater. Over 5000 complete units have been sold since the first of the year.

A progressive western industry constantly in touch with every demand of the market.

Occidental

Gas Ranges—Circulators—Conversion Burners

STEIGER & KERR STOVE AND FOUNDRY CO.
San Francisco

We Manufacture a Full Line of Strictly

High Grade Gas Appliances

Including

Conversion Gas Burners
Circular Heaters
Warm Air Furnaces
Gas Ranges

Our Catalog is yours for the asking

SECURITY STOVE & MFG. CO.
Kansas City, Mo.

ARKNATCO ADDS HAMBURG TO LIST OF 55 GAS COMMUNITIES

R. W. Curran, general manager of the Arkansas Natural Gas Corporation properties in Arkansas, with headquarters in Little Rock, reports that with the completion of the distribution system at Hamburg, Ark., now under construction, 56 Arkansas communities will be served from the company's lines operating out of the Little Rock office. He also anticipates early construction of systems at Ashdown and Star City.

TEXAS GAS UTILITIES TO PURCHASE GAS FROM ANGLIN O. AND G. CO.

Texas Gas Utilities Company with headquarters at Del Rio, Texas, has closed a contract with the Anglin Oil and Gas Company, of Crystal City, Texas, whereby gas will be supplied to the former company from wells owned by the oil and gas company in Zavala County near La Pryor.

The Texas Gas Utilities will distribute the gas in Uvalde and other towns in the Winter Garden district.

PACIFIC GAS AND ELECTRIC TO ISSUE $25,000,000 BONDS

Pacific Gas and Electric Company of San Francisco, Calif., has been authorized by the State Railroad Commission to issue $25,000,000 of its first and refunding mortgage gold bonds of Series "F," dated June 1, 1930, due June 1, 1960, with interest at 4½ per cent per annum, for the purpose of financing in part the cost of additions, extensions, betterments and improvements to its system.

C. W. ROBBINS TRANSFERRED TO CONTINENTAL CONSTRUCTION CO.

C. W. Robbins, formerly general superintendent of the distribution properties in Arkansas, of the Arkansas Natural Gas Corporation, has been transferred to the Continental Construction Company which maintains headquarters at Kansas City. The Continental Construction Company is now constructing a gas line from the Texas Panhandle to Chicago.

NEW BRANCH OFFICE FOR MAXON PREMIX BURNER COMPANY

The Maxon Premix Burner Co., of Muncie, Indiana, manufacturer of gas burners, has announced the opening of a branch office at 536 Petroleum Securities Building, Los Angeles. The new office is in charge of E. Graff, who for the past few years has been in charge of the company's office at St. Louis, Mo.

NATURAL GAS CORPORATION GETS THREE BUTANE FRANCHISES

Natural Gas Corporation of Washington, subsidiary to the Standard Oil Company of California, has applied for franchises for the service of natural gas in the towns of Arlington, Shelton, Anacortes, Blaine, Sedro-Woolley and Pasco, Wash., and has been granted franchises to serve Mount Vernon, Port Angeles and Port Townsend.

VIRGIL DANFORD, SAN FRANCISCO APPLIANCE DEALER, DIES

Virgil Danford of the Danford Sales Company, San Francisco gas appliance distributor, died at his home in Berkeley on July 13, 1930, after a brief illness. He was 63 years of age. He is survived by his widow, one daughter, Mrs. Verna N. Maharry, and his son, Porter, who was associated with him in the gas appliance industry.

Only a Few

of the hundreds of typical installations of the Humphrey Gas Unit heater, that is rapidly winning the Western Industrial gas heating load.

The Humphrey is sweeping the country, recovering the factory and industrial heating once lost to solid fuels, heating buildings that were once thought unheatable.

Every executive interested in increased send out should know all there is to be known about this important new appliance.

General Gas Light Co.

Kalamazoo, Mich.

C. B. Babcock
Pacific Coast Manager
135 Bluxome St.
San Francisco

SOUTH CHESTER STEEL PIPE

Excels for Gas Service

The unusual care given to accuracy of diameter and welding qualities, makes Chester Pipe a favorite for gas lines.

SOUTH CHESTER TUBE CO.
Chester, Pa.

Dominion G. & E. Buys Canadian Holdings

Dominion Gas and Electric Corp., has acquired controlling interest, through stock transfer, in the Canadian subsidiaries of the International Utilities Corp., including among others, the Canadian Western Natural Gas, Light, Heat and Power Co., Ltd., and the Northwestern Utilities, Ltd., according to C. J. Yorath, president and managing director of Canadian Western Natural.

Dominion Gas and Electric Corp., jointly owned by the American Commonwealth Power Corp., and the American Utilities and General Corp., will act as holding and operating company for all of the subsidiary companies previously owned and operated by International Utilities. The deal represents approximately $30,000,000.

Final steps remain before the stock transfer can become valid. The Board of Public Utility Commissioners has received a request for permission to complete the transaction.

S. W. NATURAL CONTRACTS FOR 40,000,000 CUBIC FEET OF GAS

The Utilities Production Company, subsidiary of the Utilities Power & Light Corporation, which has large gas reserves in the Quinton, Oklahoma, field, has contracted to deliver 40,000,000 cubic feet of natural gas a day to the Southwestern Natural Gas Company.

Southwestern Natural has commenced construction of a gas line that will deliver gas from the Quinton field to distributing companies in Muskogee, Boynton and Sapulpa.

LEGISLATION ON NATURAL GAS LINES PENDING IN LOUISIANA

A bill placed before the Louisiana state legislature proposes to make gas lines common carriers, following the designating of oil lines as common carriers. Another bill would place the control and regulation of the production and sale of gas in the state conservation department.

A third bill would repeal the tax on carbon black and double the severance tax on gas. Under this plan the tax on natural gas would be raised from two-fifths of a cent to 1 cent per thousand cubic feet.

E. C. Deal, President *of* Oklahoma Natural

E. C. DEAL has recently been appointed president of the Oklahoma Natural Gas Corporation headquartered in Tulsa, Okla., to succeed T. R. Weymouth, who has been elevated to chairman of the board of directors.

Mr. Deal has long been connected with Public Service and Utility companies in Georgia, New Jersey, North Carolina, New York, Kentucky, Washington, California, Illinois, Arizona, Minnesota—in fact, in practically every state of the Union. He has also served as vice-president and general manager of the Compania Cubana de Electricidad, a foreign branch of the Electric Bond and Share Company.

Mr. Deal is also president of the Peoples Light and Power Company of New York. He is a native of Georgia and has spent a great portion of his life in the South and Southwest.

Mr. Weymouth will divide his time between the Oklahoma Natural and the American Natural Gas Corporation, of which he is president. It is understood he will maintain his residence in Tulsa.

Before coming to Tulsa, Mr. Weymouth had been president of the Iroquois Gas Corporation of Buffalo, New York. He first entered the the Public Service field upon graduation from Massachusetts Institute of Technology when he became associated with the Metropolitan Street Railway Company of New York. In 1903 he entered the services of the United Natural Gas Company and its affiliated companies at Oil City, Pa., and since that time has been connected with some of the more important natural gas companies of this country. He is the inventor of a number of important devices used in the natural gas industry and developed the pipe line flow formula bearing his name.

COAST COUNTIES ISSUES YEARLY REPORT TO STOCKHOLDERS

Coast Counties Gas and Electric Company has issued its yearly report to stockholders compiled in 20-page booklet form, giving a summary of operations for the year ending December 31, 1929.

Gas sales are reported for the year 1929 as being 12.96 per cent higher than for 1928, with a total of 453,921,000 cubic feet sold in 1929 as compared with 394,768,000 cubic feet in 1928. Expenditures of the gas department totaled $663,491 with a total of 27.1 miles of pipe laid. New pipe lines to be employed in the supplying of natural gas were not included in the figures.

New customers totaling 1,789 were added to gas distribution mains bringing the total gas meters to 16,330.

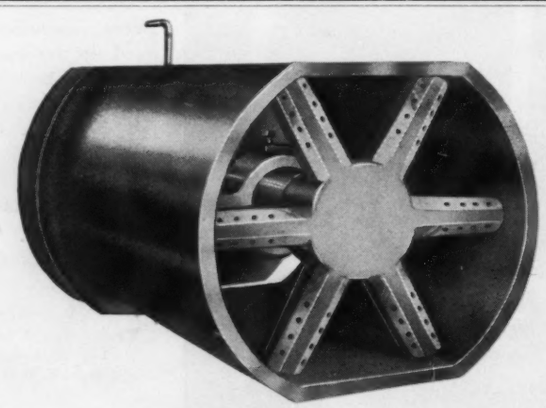
GUILFOYLE REPLACES BOYD WITH HARDWARE DEALERS ASSN.

H. L. Boyd has resigned his position as secretary of the Southern California Retail Hardware Dealers Association. J. V. Guilfoyle succeeds Mr. Boyd at that post.

The association maintains offices at 420 East Eighth Street, Los Angeles.

IMUNOL

GAS BURNERS
For
ALL INDUSTRIAL PURPOSES
JOHN ZINK CO.
Oklahoma Natural Gas Bldg.
Phone 4-9838
TULSA, OKLAHOMA
★
Flameless Burners
Flame Burners
Short Flame Burners

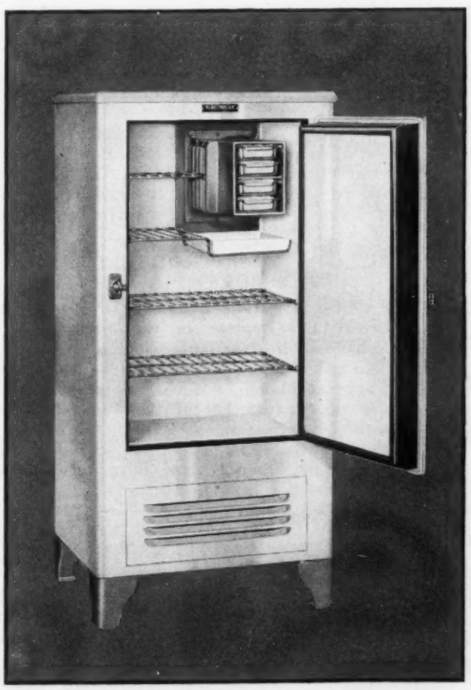


A tiny gas flame takes the place of all moving parts

$25 for your old ice box!

–adds 8,316 M.C.F.

to yearly domestic load



The popular Kitchenette Model Electrolux, one of the many models which will increase your domestic load approximately 1500 cu. ft. a month.

In one month, the Boston Consolidated Gas Company sold 462 Electrolux Refrigerators by offering a $25 trade-in allowance on old ice boxes.

EACH Electrolux uses an average of 1500 cu. ft. of gas per month. So the 462 boxes are adding 8,316 MCF a year to the company's domestic load. In addition the gas company makes a good profit from each sale.

The summer months are the most effective time to push the sale of Electrolux. Housewives are more discouraged than ever with their old-fashioned ice-boxes and fast-melting ice. They want the silence, inexpensiveness, and dependability of Electrolux. And the trade-in offer helps to speed up a decision. So take advantage of it! Concentrate your efforts on selling the only 24-hour-a-day load builder. Begin to-day.

For further information about ways to merchandise the trade-in offer—or other sales plans—write, wire or telephone Electrolux Refrigerator Sales, Inc., Evansville, Indiana.

ELECTROLUX

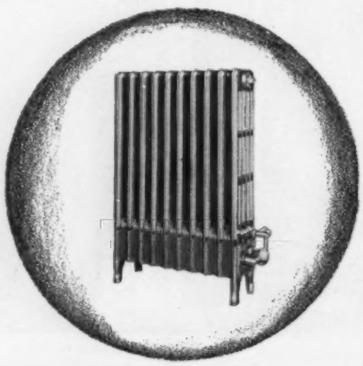
THE *Gas* REFRIGERATOR

A ★ G ★ P
GAS-FIRED STEAM RADIATORS
sell easily . . .

BECAUSE they are slender and graceful in appearance, Corto type—Cast-iron Sections with Patented Screw Nipple Construction. Automatically controlled by temperature of radiator. Can be used either as auxiliary heating, or as standard steam radiator.

Listed as standard by Underwriters Laboratories. Approved by American Gas Association Laboratory. Priced right.

Please write us to get full information and prices.

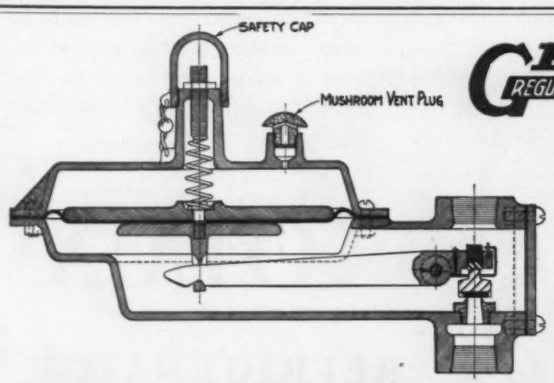


AMERICAN GAS PRODUCTS CORPORATION
Chrysler Building, New York, N. Y.

The BARTLETT HAYWARD CO.
Designers and Builders
GAS HOLDERS
COMPLETE COAL GAS, CARBURETTED WATER AND BY-PRODUCT PLANTS
SALT WATER and FRESH WATER CONDENSERS
PURIFIERS, STEEL TANKS, FELD VERTICAL SCRUBBERS

Main Office and Works
Baltimore, Md.

Lincoln Building
New York City



GROBLE REGULATORS & GOVERNORS

The Groble No. 1 Service Regulator with or without Dead Weight Safety Valve, made with ¾", 1" and 1¼" Inlet and Outlet Connections.

GROBLE GAS REGULATOR COMPANY, Anderson, Ind.

TEXAS GAS UTILITIES CO. LINE TO DEVIL'S RIVER COMPLETED

ANNOUNCEMENT is made by the Appalachian Gas Corporation of the completion of the gas line of its subsidiary, the Texas Gas Utilities Company, originating in the Eagle Pass natural gas fields of Texas, and extending to the electric generating station of the Central Power & Light Company located on Devil's River. The line, which is approximately 63 miles in length, is now supplying the entire fuel requirement of the power plant.

Ross Holmes, chief engineer of the Appalachian, was in charge of the construction of the line which also is to deliver gas for domestic and industrial purposes in Del Rio and other communities in Maverick, Kinney and Valverde counties.

The line, according to statement of Mr. Holmes, is absolutely straight for the first 47 miles, with but two gentle curves in the remainder of the line. A. O. Smith pipe was used and was supplied in 60-foot sections. This resulted in a considerable reduction in welding costs, according to Mr. Holmes.

The company constructed a private road paralleling the pipe line and also a private telephone line.

GENERAL UTILITIES CO. ASKS RICHMOND, MO., PERMIT

General Utilities Company, with headquarters at Kansas City, Mo., is seeking a gas franchise in the city of Richmond, Mo., according to news dispatches. The company, of which C. A. Nicoll is general manager, has recently secured gas franchises at Liberty, Odessa, and Keytesville in Missouri.

Gas will be supplied the towns through a line to be constructed from gas acreage, now being developed by the company, in Clay and Ray Counties. The Arrow Oil and Gas Company is a subsidiary of General Utilities.

"ACCIDENT FACTS—1930" IS NEW SAFETY COUNCIL PUBLICATION

The National Safety Council with headquarters in Chicago, Illinois, recently published "Accident Facts—1930", giving a picture of accident experience for 1929, together with comparative facts and figures of previous years.

The report was prepared under the direction of the Statistics Section of the National Safety Council, of which Dr. Louis I. Dublin, Metropolitan Life Insurance Company of New York City, is general chairman.

BILL TO BE INTRODUCED AFFECTS TRANSPORTATION OF GAS

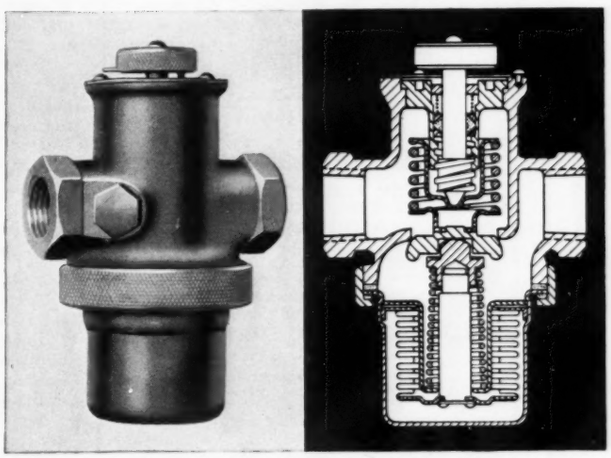
Governor Clyde M. Reed, of Kansas, has issued a statement to the effect that the Public Utilities Commission of Kansas is preparing a bill to be introduced before Congress placing natural gas pipe lines under the jurisdiction of the Interstate Commerce Commission, or some other branch of the Federal Government. The bill, according to the announcement, is to be introduced by Senator Henry J. Allen.

E. W. HODGES NAMED TO HEAD LIONS INTERNATIONAL

Earl W. Hodges, public relations director for Henry L. Doherty & Company of New York, was elected president of Lions International at the convention of the organization held in Denver, July 17.

Mr. Hodges was director of the Public Utility Information Committee of Arkansas, with headquarters at Little Rock, prior to joining the Doherty company, three years ago.

And Now the
TEMP-O-STAT



AN INDIVIDUAL ROOM TEMPERATURE CONTROL

AUTOMATIC

The Temp-O-Stat is fully automatic and brings to the operation of gas fired space heaters the advantages of complete convenience and maximum economy which distinguish all Time-O-Stat Controls.

SENSITIVE

Within the Temp-O-Stat a gas filled bellows expands or contracts with changes in room temperatures, changing from full open to closed position within a range of 4°.

POSITIVE

The valve seat within the Temp-O-Stat is inverted. There is no clogging. The operation of the control is positive, accurate and thoroughly reliable.

FOR gas-fired individual heaters Time-O-Stat has developed the Temp-O-Stat—a sensitive, self-contained, accurate, fully automatic control.

The Temp-O-Stat, operating on a range of from 60 to 80 degrees, has a wide application. It is designed for use in residences, schools, churches, stores, wherever gas fired space heaters are used.

The Temp-O-Stat has a capacity of 70,000 B. T. U. of .6 specific gravity gas with a pressure drop of only .4". Built of non-corrosive materials throughout. Detail information upon request.

BRANCH OFFICES
NEW YORK
BOSTON
CHICAGO
EXPORT DEPARTMENT
NEW YORK

TIME-O-STAT CONTROLS COMPANY
ELKHART, INDIANA

EXCLUSIVE DISTRIBUTORS IN ALL PRINCIPAL CITIES OF THE UNITED STATES.
CANADIAN DISTRIBUTORS TORONTO AND MONTREAL.

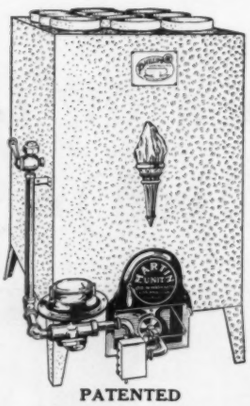
Manufacturers of Automatic Controls for Oil Burners, Gas Burners, Coal Burners, Electrical Refrigerators, Furnace Fans, Mechanical Stokers, Industrial Ovens, Ice Machines, Unit Heaters . . . also of Sign Flashers, Mercury Switches, Electric Heaters, Corrugated Metal Bellows

THE BABY DIGGER

The Ideal Modern Way To Dig Gas Trench!

Cleveland Baby Diggers are unequalled for downright usability and trenching satisfaction. Compact — transportable — economical. Tough — fast — dependable. Precision built of finest materials. A wheel type trencher on full crawlers. You'll find Cleveland Trencher pioneering the features that count. Write for particulars.

THE CLEVELAND TRENCHER COMPANY
"Pioneers of the Small Trencher"
20100 St. Clair Ave.
Cleveland, Ohio, U. S. A.
Distributed By
Edward R. Bacon Co., San Francisco, Cal.
Frank T. Hickey Co., Los Angeles, Cal.



PATENTED

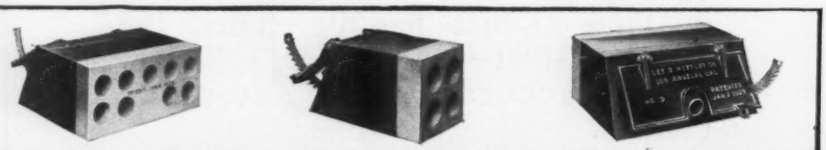
Martin Unit Gas Furnaces

ARE THE RESULT OF 38 YEARS HEATING EXPERIENCE
MADE IN FOUR SIZES
Electric, Thermostat or Manual Control
Approved by A. G. A. Laboratory and by the City of Los Angeles
Write for your copy of "Modern Heating Methods"

PHILLIPS HEATING, VENTILATING & MFG. CO.
1710 W. Washington St.
Los Angeles, California

Live Agents Wanted

TESTING LABORATORY A.G.A. APPROVED



Mettler Entrained Combustion Gas Burners

FOR ALL Purposes Kinds of gas Pressures

406 S. Main St. **LEE B. METTLER, CO.** Los Angeles Cal.

Gentlemen:
Kindly send me a sample can and full details regarding A-B Vit

The New Porcelain Enamel Cleaner

Name.....

Company.....

Address.....

No obligation, of course
Clip and mail today to

A-B STOVE CO., Battle Creek, Mich.

HOUSTON GULF GAS CO. TO BUILD LOOP ON REFUGIO-HOUSTON LINE

Announcement is made by the Houston Gulf Gas Company, a United Gas Corp. subsidiary, of the immediate construction of a 16-inch line that will loop its Refugio-Houston line. The length of the loop-line will be approximately 100 miles.

The line will be laid in two sections, one section from the Refugio field to the Edna station, a distance of approximately 60 miles, where the company has a 14-inch line, and the other extending from Houston south about 40 miles. Construction is to be begun at once on this project which will materially increase the company's gas capacity in the Houston area.

Reports indicate that the United Gas Corp. will expend approximately $12,000,000 in the early future, tying-in the various systems that came in under the recent merger of the United Gas Company with the gas properties under the control of the Electric Power & Light, an Electric Bond & Share interest.

J. L. FLETCHER NAMED TO POST WITH LOUISIANA C. OF C.

John L. Fletcher, advertising manager of the Arkansas Natural Gas Corporation, has succeeded Colonel F. M. Witherspoon as chairman of the northern district of the Louisiana State Chamber of Commerce. Colonel Witherspoon has been appointed as chairman of the state committee.

Mr. Fletcher, as chairman of the northern district, arranges the radio program presented each Thursday night from Shreveport, which sets forth the advantages of Louisiana as an ideal manufacturing center, and exploits the natural resources of the state. These programs are presented over KTBS at Shreveport.

SOUTHWESTERN NATURAL GAS CORP. OPENS TULSA, OKLA., OFFICE

H. G. Scott, president of Appalachian Gas Corporation, has announced the opening of offices for the Southwestern Natural Gas Corporation, a subsidiary, in the National Exchange Bank Building, at Tulsa, Okla., L. E. Farley, formerly of San Antonio, Texas, is in charge of the offices.

The Southwestern is now constructing a gas line from the Quinton, Oklahoma, gas fields to Boynton, Sapulpa, Muskogee and Tulsa. Mr. Farley is supervising the construction of the line, which on completion will be about 112 miles in length.

NEW CHRYSLER BUILDING IS EQUIPPED WITH GAS

The new Chrysler Building in New York City, tallest structure in the world, has been equipped for gas service. Two risers, one 777 feet tall and extending from the basement to the 70th floor, the other 250 feet high and extending to the 22nd floor carry the gas to every office in the building. A small restaurant located on the 71st floor is also equipped with gas.

J. C. REID TO MANAGE EASTLAND DISTRICT FOR COMMUNITY

James C. Reid has been appointed as manager of the Community Natural Gas Company in the Eastland District, replacing L. B. Denning, Jr., who has been transferred to the Dallas office of the company. Community Natural is the distributing organization for Lone Star Gas Company.

CARROLTON, MO., FRANCHISE GIVEN TO McGREW *ET AL*

At a special election held recently, voters of Carrolton, Mo., granted a natural gas franchise to E. J. McGrew and associates.

All the hot water you want
—no waiting, no bother!
This instant hot water service saves 4 to 6 hours of your time each week
School bells end vacation days. Then comes additional cares for mothers — little faces to wash and clean clothes to put on. Perhaps a parting smudge by a four-legged friend adds another care.
No wonder that mothers today want their homes to have the many conveniences — like INSTANT HOT WATER, to wash away the trouble.
An abundant supply of hot water, instantly, saves your time and energy—by quickly dissolving dirt and grease, by making it easy to keep things sweet and fragrant.
No Need of Watching the Automatic Gas Water Heater
With the Automatic Gas Water Heater, a thermostat turns the gas on and off. It maintains the water temperature at 140 degrees day and night. At any moment one can have deep hot water for bathing, a beautiful for shaving. No gas is wasted keeping the water hot, the water stays hot because the boiler is insulated
This instant hot water service costs less than one-fifth of a cent per gallon—the lowest cost of any method of heating water in the home.
Special Summer Sale
Believe it or not—the P. G. and E. will completely install an Automatic Gas Water Heater for you as follows:
$5 down
PACIFIC GAS AND ELECTRIC COMPANY
P·G·and E·
Owned Operated Managed by Californians

This 3 col. x 15 in. advertisement appears in newspapers in P. G. & E. territory during month of August.

A Tip for Increasing Your Sales

Experience has proved to this Company that advertisements, like the one reproduced above, ARE producing good results by increasing sales of Automatic Gas Water Heaters.

Because these advertisements are designed to include dealers, they can produce results for you too, if you let them. Here's how that works—

The advertisements set forth all of the strongest fundamental sales appeals . . . advantages that appeal to women —advantages that cause women to want Automatic Gas Water Heaters. Consequently, Real Prospects are created.

When these prospects shop, a window display of Automatic Gas Water Heaters will naturally attract them . . . . to your store if you display Automatic Gas Water Heaters.

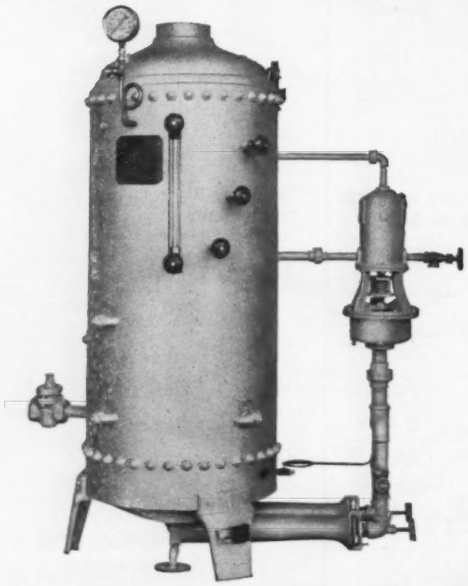
PACIFIC GAS AND ELECTRIC COMPANY

P·G·and E·

Owned · Operated · Managed
by Californians

Automatic Gas Fired Boilers

LATTNER



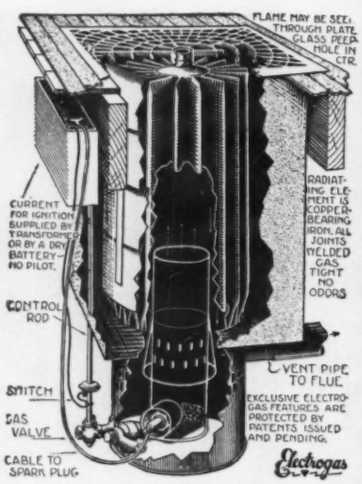
All Sizes from ½ to 30 H. P.

P. M. LATTNER MANUFACTURING CO.

Factory
516 12th Avenue
Cedar Rapids, Iowa

Warehouse Distributor
2646 South Hill Street
Los Angeles, California

Electrogas


FLAME MAY BE SEEN THROUGH PLATE GLASS PEEP HOLE IN CTR.
CURRENT FOR IGNITION SUPPLIED BY TRANSFORMER OR BY A DRY BATTERY—NO PILOT.
RADIATING ELEMENT IS COPPER-BEARING IRON. ALL JOINTS WELDED GAS TIGHT NO ODORS
CONTROL ROD
VENT PIPE TO FLUE
SWITCH
GAS VALVE
EXCLUSIVE ELECTRO-GAS FEATURES ARE PROTECTED BY PATENTS ISSUED AND PENDING.
CABLE TO SPARK PLUG
Electrogas

—The Officers' Quarters, San Francisco Presidio, are heated by these remarkable floor furnaces.

Manufactured in San Francisco
by Electrogas Furnace Co., Rialto Bldg.

Electrogas

BITURINE COATINGS

Biturine Enamel

Biturine Enamel Primer

Biturine Coupling Solution

Biturine Solution No. 5

Biturine 70-30

For information, address

GENERAL PAINT CORPORATION
Specialists in the science of protective coatings for industry

Chicago—105 West Adams St. New York—11 Broadway. San Francisco—160 Fremont St. Los Angeles—908 South Main St. Seattle—1406 Dearborn St. Portland, Ore.; Tulsa, Okla.; Houston, Texas; Dallas, Texas; Spokane, Wash.

EXPORT OFFICES: Head Office—160 Freemont Street, San Francisco, Calif. U. S. A.

Branch Office. 11 Broadway, New York, N.Y., U.S.A.

COAL GAS PLANT OF 25,000,000 C. F. FOR VANCOUVER

Order for the first unit of a coal gas plant, which when developed will have a capacity of 25,000,000 cubic feet, is now being placed by John Keillor, chief gas engineer for the British Columbia Electric Railway Company. Mr. Keillor is now in England.

The initial development embraces the erection of a $750,000 plant with a capacity of 3,000,000 cubic feet on the Royal City Mills property, now owned by the gas company, at Vancouver, B. C.

This property is the same as that on which the new gas holder was completed some months ago by the B. C. Electric Co Eventually all this area will be occupied by a second large gas holder, a purifying, scrubbing and ammonia extracting plant, the present new holder, and the gas plant now projected. The new plant will be of the vertical retort type. Contract was expected to be placed towards the end of July, and work will commence on the new plant shortly after that date, and will take 16 months to complete.

SAXET HOLDINGS ACQUIRED BY MOODY-SEAGRAVES GROUP

Following the acquisition by the Moody-Seagraves interests and the G. E. Barrett & Company, banking group, of substantial interest in the Saxet Company, O. R. Seagraves, chairman of the executive committee of United Gas Corporation and C. E. Morrow, vice-president of G. E. Barrett & Co., have been named to the board of directors of the Saxet Company.

The Saxet Company has extensive holdings in the White Point, Saxet and Refugio gas fields in south Texas. The Houston Gulf Gas Company, a subsidiary of the United Gas Corporation purchases approximately 27,000,000 cubic feet of natural gas daily from this company.

Convertible bonds to the amount of $5,000,000 have recently been issued by the Saxet Company, through G. E. Barrett & Company. The bonds are dated June 15, 1930 and will mature June 15, 1945. W. L. Pearson is president of the Saxet Company.

DEARBORN CHEMICAL CO. ISSUES BOOK ON WATER CORRECTION

Dearborn Chemical Company has recently brought from the press a 95-page book on "Scientific Water Correction." The new book is attractively bound with stiff cover, in three colors, and is profusely illustrated with line cuts, half-tones, and decorative art work.

The book treats of pipe corrosion, scale forming, water analysis and its interpretation, foaming and priming, and many other subjects, as well as describing the various products of the Dearborn Chemical Company.

P. G. AND E. INSTALLS AUTOMATIC GAS ODORIZATION EQUIPMENT

Gas odorizing installations of the new automatic type are now being installed by the Pacific Gas and Electric Company at various strategic points along its natural gas system, in central and northern California. Completed recently are jobs at Vernalis meter station, Livermore and San Pablo. Further installations to be put in at an early date include Tracy, Milpitas, Vallejo, Hollister and Sunol.

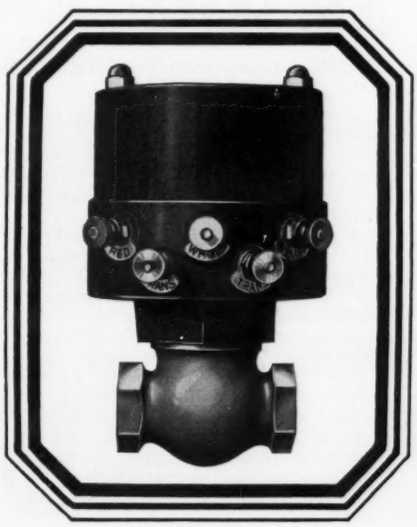
ROY PHEBUS ASKS FRANCHISE AT DOUGLAS, WYO.

Douglas, Wyoming, has been asked to grant a natural gas franchise to Roy Phebus.

Wanted: tough installations for the Teeple Motorized Gas Valve!

It is only when the going gets tough that you really appreciate the many superiorities of the Teeple Gas Valve over ordinary valves. The Teeple valve does not have to be installed near the thermostat. It operates with an ordinary door-bell transformer. Simplified wiring makes it easy for the plumber or service man to make the installation. Has surplus power sufficient to handle any gas pressure in commercial use. Low current consumption. Quiet, dependable operation. No damage possible from short circuit. No burning of contacts. Reasonably priced. . . . If you're interested in superlative value performance, specify Teeple. Descriptive literature gladly mailed on request. L. R. Teeple Company, 540 East 9th St.. Portland. Oregon.

The Teeple valve is built in standard small sizes (½ in., ¾ in., 1 in.), single capacity per size, with unrestricted openings.

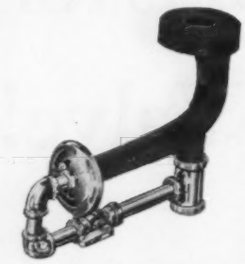


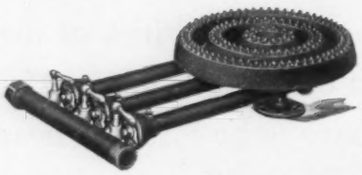
TEEPLE

TEEPLE

ELECTRIC GAS VALVE

GAS BURNERS For Every Purpose





Johnson's complete line of gas burners includes a size and style for every purpose. Every burner has been carefully designed to produce maximum heat with a minimum amount of gas. If you want the best, insist on Johnson Gas Burners. Catalog and price list sent on request.

JOHNSON GAS APPLIANCE CO.
Cedar Rapids IOWA

Pacific Coast Representative: C. B. Babcock Co.,
135 Bluxome Street, San Francisco

ATTENTION! Commercial Members Gas Companies

A Spic and Span gas stove is a credit to the house-wife and can be kept that way by the use of

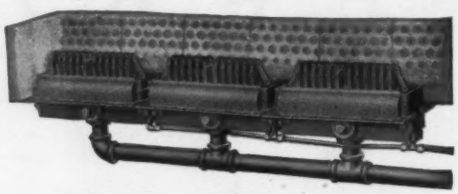
Removes Grease DOUBLE DUTY REG. U.S. PAT. OFF. *Prevents Rust*

GAS RANGE & STOVE CLEANSER

WALMAR LABORATORY Oshkosh, Wisconsin

Western Distributor
C. B. BABCOCK CO., San Francisco, Los Angeles

R. M. C. Gas Burner



Durable Safe Economical

ROTARY MANUFACTURING CO.

5720 Long Beach Avenue Los Angeles, California

R. D. O'NEIL APPOINTED TO SO. DISTRICT FOR AMERICAN METER

R. D. O'Neil has been appointed as an engineering and sales representative for American Meter Company, with headquarters at 8 South Thirteenth Street, Birmingham, Ala. He will specialize in servicing and sale of Wescott orifice meters, Linderman orifice meters, Metric indicating flow meters and rate volume controllers.

Mr. O'Neil has had extensive experience in the development, construction, specifying, application, testing and checking of plant, field and laboratory instruments. After being graduated as industrial engineer from the University of New Hampshire in 1926, he went to the Pacific Coast as electrician for the Southern California Edison Company, later working as draftsman for John F. Willard & Sons at Los Angeles. Late in 1927, he entered the employ of American Meter Company in the Metric Metal Works at Erie, Pa. There he served successively in several departments and in various capacities of increasing responsibility. He also traveled as service and sales representative, ultimately attaining the position of engineer, which he held until his recent appointment to the southern district.

NEW RATE SCHEDULE PROPOSED FOR VANCOUVER, B. C.

A minimum charge of 75c and a graduated lower scale of rates for gas consumption has been suggested to the Vancouver, B. C., city council by the B. C. Electric Railway Company's gas department, as an alternative to the present system of meter rentals. The scheme has been outlined to the city council in a letter by W. G. Murrin, president of the utility.

Under the present system in Vancouver there is no minimum charge for gas, but a meter rent of 25c per month is levied for service and $1.40 per 1,000 cubic feet is charged for the first 1,000 cubic feet used.

By the proposed new scale a minimum of 75c will be charged for the first 300 feet and the next 700 cubic feet will be charged for at $1.25 per 1,000 cubic feet. Above that and under 19,000 cubic feet the rate will be $1.20 per 1,000 cubic feet.

LONE STAR EMPLOYEE RECEIVES LIFE-SAVING MEDAL

At a special ceremony held at the shops of the Lone Star Gas Company in Dallas, Texas, Olan R. Paschall, a painter of the company, was recently presented with the president's medal of the National Safety Council, for life saving.

A. W. Breeland, safety director of the Lone Star Gas Company had charge of the presentation ceremony. E. C. Selecman of the legal department of the company, D. L. Cobb, secretary-treasurer, and H. A. Jackson, assistant treasurer, also officially represented the Lone Star at the ceremony.

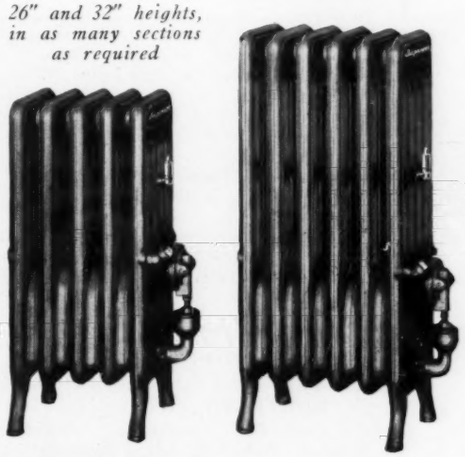
The award was given Mr. Paschall for successfully applying the prone pressure method of artificial respiration to the manager of a City Ice Company station who had been overcome by ammonia fumes while repairing ice-making machinery. This is the fifth similar award to be made in the state of Texas.

LOVELAND GETS NATURAL GAS SERVICE IN JUNE

Loveland, Colo., received natural gas service late in June through the distribution mains of the Public Service Company of Colorado. The supply is delivered to the town by the Colorado and Wyoming Gas Co. Loveland offices of the Public Service Company of Colorado are maintained at 115 Fourth street.

New Pacific Radiator Outstanding Gas Heating Achievement

26" and 32" heights, in as many sections as required



Now is the Time to Install it

THE NEW PACIFIC Gas-Steam Radiator meets every ideal of architect, builder, and owner. Greater radiation surface of the 5-column design gives improved efficiency, faster heating, and greater beauty. Steam pressure and gas consumption are automatically controlled. Write for full details on this profitable, easy-to-sell item.

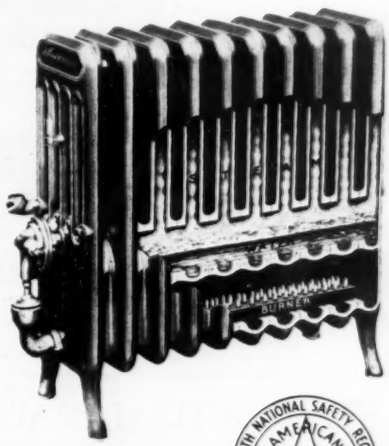
A Quality Product

Materials and workmanship of Pacific Gas-Steam Radiators are guaranteed to be of the highest grade, and free from defects. Radiator sections, burners, regulator housings, and air mixers are carefully selected, accurately machined grey iron castings. Every Pacific Gas-Steam Radiator, like other products of this firm, is tested and adjusted to actual operating conditions before leaving the factory.

Radiator Section

Outstanding Features

Each radiator section and combustion chamber is a single-unit casting. Burner extends full length of radiator, under exact center of water chamber, developing maximum steam in minimum time. Burner cast in one piece, without joints or welds. Double-disc diaphragm regulator gives positive control of gas and steam pressure. The owner has nothing to do but light burner, and this radiator provides quick, healthful heat, automatically controlled and requiring no attention whatever after it is turned on.



A. G. A. Approval

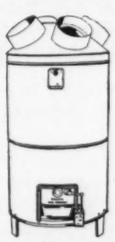
The laboratory seal of American Gas Association appears on every Pacific Gas-Steam Radiator, assurance that it has met basic national safety requirements. Also approved by Underwriters' Laboratories.

Pacific Gas Radiator Company

Gas Heating Headquarters

Roseberry and Walter Streets
Huntington Park California

Gas-Steam Radiators



Round Furnaces

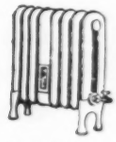
Dual Pipeless Furnaces

Fireplace Radiant Heaters

Recess Radiant Wall Heaters

Automatic Storage Hot Water Heaters

Pipeless Floor Furnaces



Gas Radiators—Pressed Metal and Cast Iron

Agencies Throughout the West

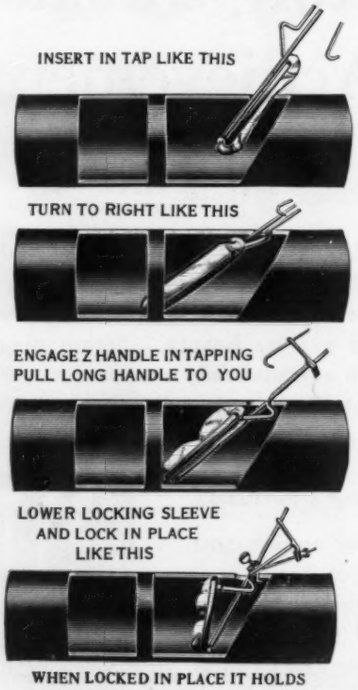
Call for a Pacific Heating Engineer

MANUFACTURERS *of* EVERY TYPE *of* GAS HEATING APPLIANCE

PIPE STOPPERS

FOUR EASY STEPS

HOW TO USE THE GOODMAN STOPPER


INSERT IN TAP LIKE THIS
TURN TO RIGHT LIKE THIS
ENGAGE Z HANDLE IN TAPPING
PULL LONG HANDLE TO YOU
LOWER LOCKING SLEEVE
AND LOCK IN PLACE
LIKE THIS
WHEN LOCKED IN PLACE IT HOLDS

PLUGS MASKS Etc.

Safety Gas Main Stopper Co.

523 Atlantic Ave., Brooklyn, N. Y. Cable Address: Gastopper, N. Y.

Pacific Coast Representative: C. B. Babcock Co.

135 Bluxome Street San Francisco, California

STANDARD MANAGEMENT & OPERATING CORPORATION

225 Bush Street San Francisco, Calif.

PUBLIC UTILITY MANAGEMENT
ENGINEERING AND CONSTRUCTION
REPORTS AND APPRAISALS

The staff includes the following who have been associated with successful nation-wide public utility enterprises for several years past.

E. F. ENGLISH
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FORNEY

COMBINATION GAS and OIL BURNERS

For Power Plant and Industrial Uses

Write for Literature
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FORNEY COMBUSTION ENGINEERING CO.

305 THOMAS BLDG., DALLAS, TEXAS

J. FRANK STACY JOINS BROTHERS IN STACEY BROS. GAS CONST. CO.

Announcement is made that J. Frank Stacey has joined with his brothers in the management of Stacey Bros. Gas Construction Company of Cincinnati, Ohio. Mr. Stacey was for a long period vice-president and general manager of the Nashville Gas Company of Nashville, Tennessee.

This move reunites a family which has pioneered in the gas industry in the United States. George Stacey, father of the three brothers, J. Frank, J. E., and A. J., and grandfather of Wayne, was associated with Joseph Dempster, British shipbuilder, when the latter entered the gas industry. George Stacey's work was chiefly along construction lines, and took him finally to New Orleans, where he supervised the erection of a gas holder. Remaining in America, he built up a company which after his death in 1873 became known as the George Stacey Company.

In 1914, two sons and the grandson, Wayne, withdrew from this organization and formed the Stacey Bros. Gas Construction Company, and now with the addition of J. Frank Stacey to the firm, the family is reunited.

UNITED GAS CORPORATION BUYS NORTHERN TEXAS UTILITIES

United Gas Corporation, subsidiary of Electric Power & Light Corporation, has acquired control of the Northern Texas Utilities Company, according to information released from the headquarters of the company at Houston. The deal was consummated through the purchase of a large percentage of the preferred stock and common stock of the company.

The Northern Texas Utilities Company operates a gas system extending from the Amarillo fields, where the company controls gas rights on a large acreage, in a southeastern direction to Wichita Falls. Gas is distributed by the company at Wichita Falls and in about nine other communities, including Wellington, Vernon, Childress and Guanah, Texas. In Wichita Falls the company does only an industrial and commercial heating business.

About 7500 customers are served by the company direct, with gas being supplied for resale to companies serving about 5000 customers. D. A. Upham was president of the Northern Texas Company, which maintained headquarters at Whichita Falls, and D. L. Hill was general manager.

FRANK A. CRESSEY, JR., GOES TO BASFORD CO., AS VICE-PRES.

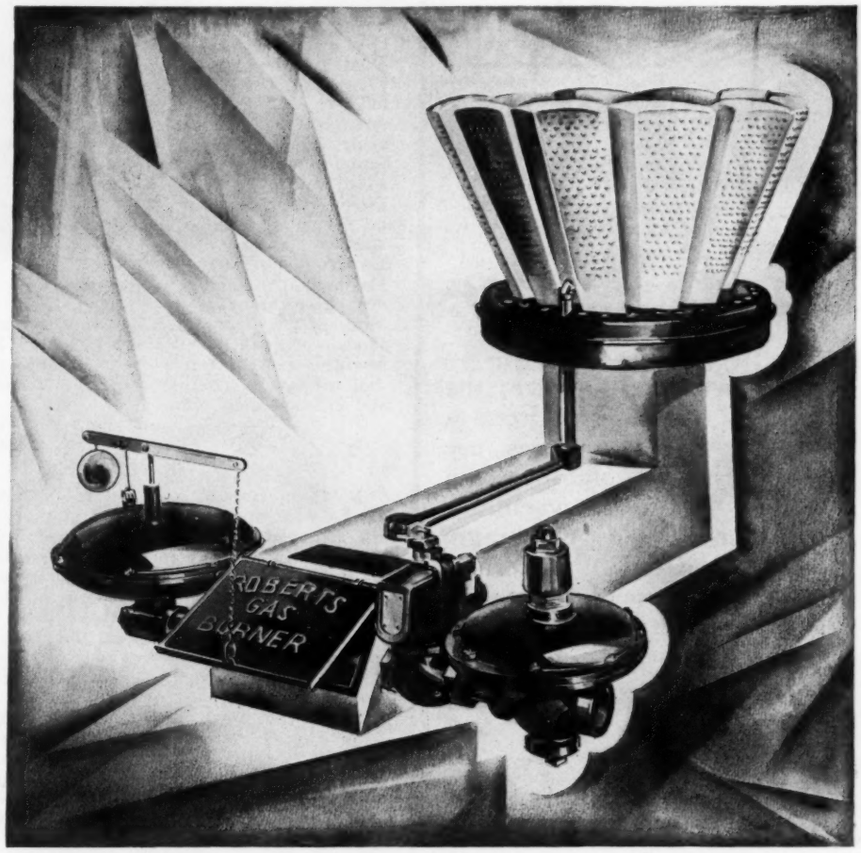
Frank A. Cressey Jr., formerly president of the Modesto Gas Company, Modesto, Calif., is now associated with the H. R. Basford Company of San Francisco, as vice-president. The Basford Company maintains offices at 665 Howard Street, and is representative for Ruud Manufacturing Company, Sprague Meter Company, Tappan Stove Company and Fraser Furnace Company.

Mr. Cressey is one of the pioneers in the gas utility field on the West Coast.

CITIES SERVICE BUILDING LINE NEAR BLACKWELL, OKLA.

Cities Service Gas Company has a gas compressor station under construction at a point on its system 1½ miles north of Blackwell, Oklahoma. The plant, which will consist of five 1,000 h.p. Cooper engines, will boost gas from the Oklahoma City and other fields south of Blackwell. About 300 men are at work on the plant.

Why be content with less than the Roberts?



ARE you selling your customers the best in gas heating equipment?

Does the Conversion Burner which you offer them include in its construction these very essential features?

1. China Clay Radiants, that direct and drive the heat to the point where it can be most efficiently utilized.
2. Drawn Steel Venturi Mixers, the smooth finish permitting at least 30% higher air injection.
3. 1¼" manifold assuring an abundant supply of gas to the burner.
4. Roberts Diaphragm Air Control with delayed action, which gradually admits the air to the burner, thus eliminating excess noise.
5. 1¼" Minneapolis Motor Gas Valve.
6. 1¼" Equitable Spring Type Gas Governor.
7. Johnson Adjustable Cock to each mixer.
8. Secondary Air Duct made of Armco Iron. Air cooled castings assuring longer life. Air supply controlled and delivered to the point of combustion.
9. Roberts Safety Pilot with lava stem and cap having all electrical contacts on outside where they are accessible.
10. Minneapolis Controls.

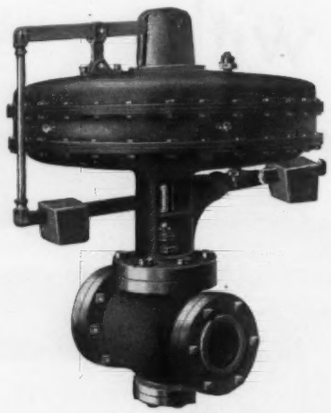
Demand the Roberts features when looking for a conversion burner. After you have satisfied yourself that you are getting the best, then standardize on the Roberts Controlled Gas Heating Unit. Be content with none less.

Send for complete new booklet showing methods successfully used by some of the country's foremost gas companies in the merchandising of gas for home heating. Ask for book entitled "Sell Health and Comfort in the Home"— yours for the asking.

ROBERTS-GORDON APPLIANCE CORPORATION
DELAWARE AVENUE AT TUPPER STREET
CURTISS BUILDING BUFFALO, N. Y.

ROBERTS CONTROLLED GAS HEATING UNIT

Relief for Your Tanks



Protection for Your Meters

C-F

Vacuum Relief Valve

IN case of line stoppage or other causes that result in the pulling of a vacuum in storage tanks and purifiers, this Regulator comes quickly to the rescue. It is placed in a line between suction and discharge of compressor so that, should the pressure in the suction line to the compressor drop to zero, the Relief Valve will open and relieve the vacuum tendency. For a vacuum of 8 oz. or less, use the Duplex Regulator shown above. For higher vacuums, use the single diaphragm Vacuum Relief. Action is reliable. Thousands of meters and tanks have the constant protection which this C-F offers you.

The Chaplin-Fulton Mfg. Co.

Organized 1884—Oldest Builders of Gas Regulators in the Country. Built in all Sizes From 1 Inch to 24 Inches; For All Service. 1 oz. up to 2,000 lbs. Pressure to Square Inch.

28-40 Penn Avenue Pittsburgh, Pa.

REPRESENTATIVES:

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HEATING--DOMESTIC
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GAS APPLIANCES

C. B. Babcock Company

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W. J. McART WITH PITTSBURGH EQUITABLE METER COMPANY

W. J. McART recently became a part of the Pittsburgh Equitable Meter organization, working out of the company's Tulsa, Okla., office.

The training and field work done by Mr. McArt has been of a highly technical nature and he is well fitted for his work with the company.

W. J. McArt

Graduated from Case School of Applied Science, Cleveland, Ohio, in 1918, Mr. McArt entered the army for the duration of the war and returned to Cleveland where he became an inspection engineer for the Foote-Burt Company of that city. Later he went with the City Machine Company of Cleveland, where he stayed until 1925. Following that Mr. McArt was engaged in special work with state highway engineers over the entire united States.

LOUISIANA GAS & FUEL MOVES OFFICES TO HOUSTON, TEXAS

N. C. McGowen, president of the Louisiana Gas & Fuel Company and in charge of the management of the newly formed United Gas Corporation, has announced the removal of the main offices of the Louisiana Gas & Fuel Company from Shreveport, to Houston, where main offices of the United Gas Corporation are also located, this corporation representing a recent merger of the Magnolia Gas Company, and the other interests. Houston headquarters for the interests are in the Niels Esperson Building.

John S. Ivey, of the geological department of the Louisiana Gas & Fuel Company, has been given charge of this department with the United Corporation. B. M. Nowery and C. A. McDowell of the Palmer Corporation have also been transferred to the Houston offices. A branch office of the Louisiana Gas & Fuel Company will still be operated from Shreveport, according to announcement.

JUAREZ METERS TO BE CHANGED TO THE METRIC SYSTEM

In compliance with a recent request of the Mexican government, N. F. Lucero, manager of the Juarez Gas Company, S. A., Juarez, Chihuahua, Mexico, announces that all indexes of meters in Juarez are being changed to the metric system.

A new rate will soon be in effect in Juarez, which will stimulate the use of natural gas in that border city, both for domestic and industrial purposes. The success of these new rates is evidenced by the interest taken by such large establishments as the Juarez Brewery, and D. and M. Distillery, which have signified the intention of changing to natural gas provided a suitable agreement can be reached.

J. J. FOX NAMED PRESIDENT OF ADVERTISING CLUB OF HOUSTON

Joe J. Fox, advertising director of the Houston Oil Company and its affiliated companies, Houston Pipe Line Company and Houston Natural Gas Company, has recently been elected president of the Advertising Club of Houston.

Moore's Gas Fired Circulating Heaters

The One Complete Line

Showing doors open

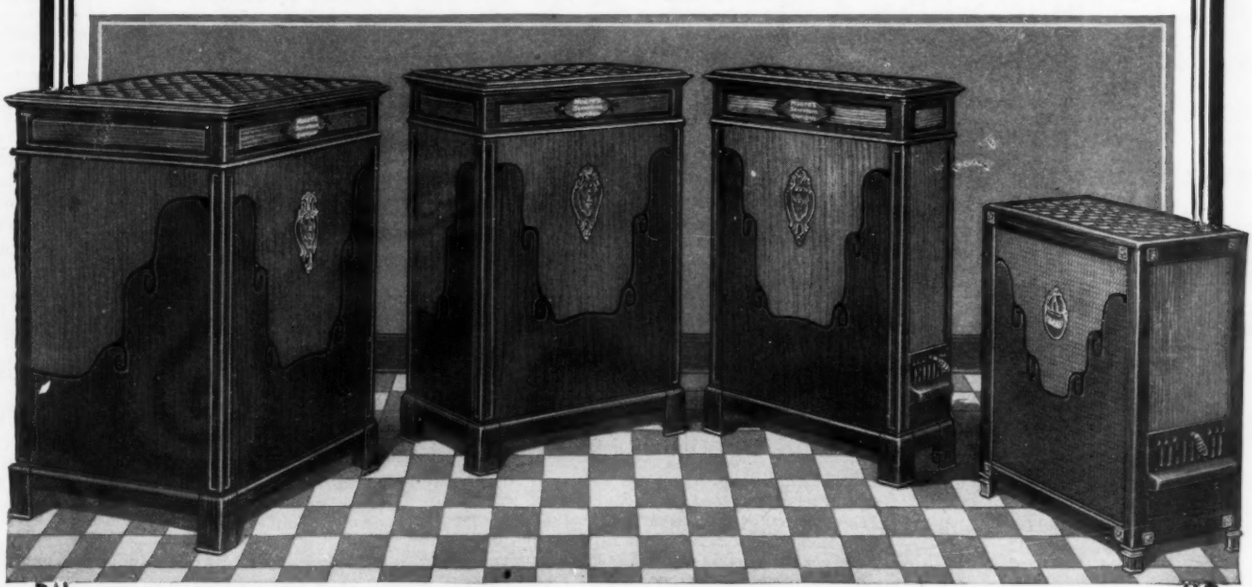
MOORE'S 18 Series
PURITAN

Positive Circulation *plus*
Abundant, Controllable,
Luminous, Radiant Heat

2 Sizes ***2 Finishes***

Showing doors closed

There is a MOORE'S Gas Heater for Every Heating Requirement



Moore's 17 Series PURITAN
3 Sizes — 3 Finishes

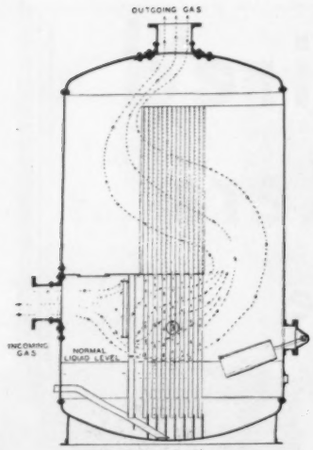
Moore's ACE
1 Size — 2 Finishes

Ask for Information

MOORE BROTHERS COMPANY

Originators of the Circulating Heater

JOLIET Since 1857 ILLINOIS



Takes Out All the Mist

The Campbell MIST-D-FIER takes ALL the oil mist and water mist out of the gas line.

Note the "caps." Set that way for emphasis, and means ALL.

Gas consumers have no need for crude oil, neither have delicate meters. Choke off the crude at the source with a Campbell MIST-D-FIER, and turn it into profit. The MIST-D-FIER takes out ALL the mist.

For full particulars write for Bulletin No. 6

J. A. CAMPBELL CO.
Natural Gas Engineers
CONSULTING DESIGNING CONSTRUCTING
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P.O. DRAWER 669
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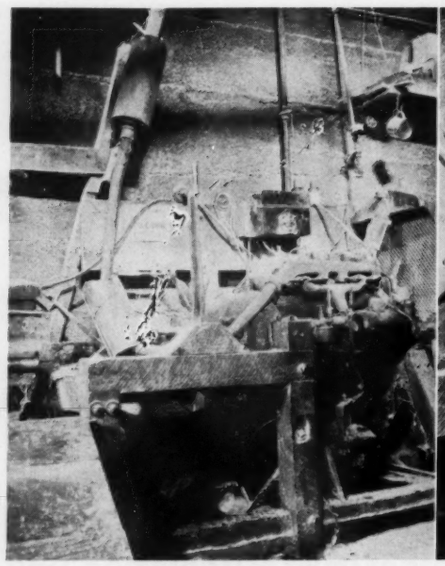


Fig. 1

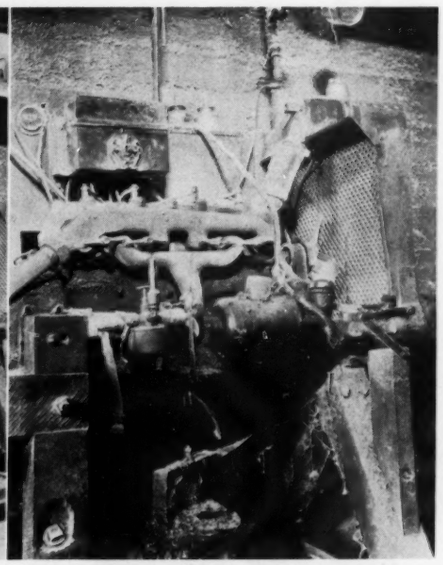


Fig. 2

AT LEFT: The motor of a Model T Ford, mounted in a frame. A larger drive shaft replaced the one previously used. AT RIGHT: Close-up showing gas regulator below the carburetor, with a ⅜-inch gas line connection between.

Natural Gas Turns Ford Motor *for* Joplin Seed Company

By T. F. Van Winkle

Joplin Gas Company, Joplin, Missouri

THE old saying, "Necessity is the mother of invention," has proven true in many instances, and the field of industrial gas use in no exception to the general rule. The Carlson Seed Company of Joplin, Mo., met a practical problem with an ingenious solution when it installed a Ford motor, powered with natural gas, for operating the machinery in the company's plant.

Ray Carlson, manager of the company, had installed for equipment a feed-grinder, two grain elevators, a cleaning machine, a corn sheller and a feed-mixer, such as is used for poultry and dairy feeds.

The problem confronting Mr. Carlson was how to operate this machinery at the lowest possible cost and yet maintain the highest point in efficiency. He obtained a second-hand motor which had been used in a Model T Ford, took out the drive shaft and put in a larger one, and mounted the motor in a frame, as shown in Figure No. 1. Two large pulleys were attached, and this simple device operates all the machinery used in the business. In Figure No. 2, the close-up shows the gas regulator below the carburetor with a ⅜-inch gas line connection between.

The motor is being operated without trouble of any kind and has given perfect service for the past six years. During these six years, the valves have been ground once and at that time there was no carbon deposit. The motor is first started with gasoline and then changed to regular city natural gas. The monthly gas bills for this equipment average approximately one third less than the cost of gasoline operation.

BLAW-KNOX CO. BUYS RIGHTS TO AC-ME GAS CLEANER

The Blaw-Knox Company of Pittsburgh, Pa., announces the acquiring of sole manufacturing and sales rights of the Ac-me gas cleaner, formerly manufactured, under license agreement with the Empire Oil & Refining Company, by D. A. Sillers, at Dallas, Texas. The name of this unit will be changed to the Blaw-Knox gas cleaner.

The major underlying principles of the Ac-me gas cleaner were developed by engineers of the Empire Oil & Refining Company and Doherty Research Corporation, of Bartlesville, Okla. Additional improvements were made by D. A. Sillers, superintendent of gas measurement, of Lone Star Gas Company, Dallas, Texas. To the experience incorporated in the construction and development of this unit by these companies is added the wide experience of the Blaw-Knox organization in solving separation problems and also its experience in the manufacture of pressure vessels.

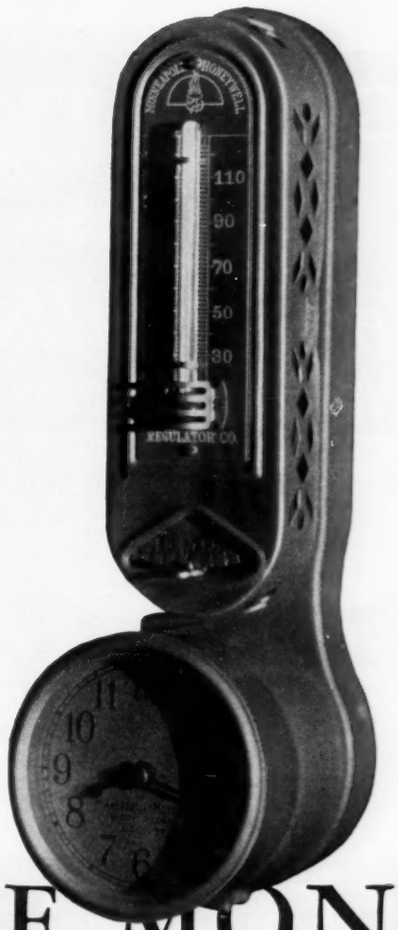
An illustrated bulletin describing general operation and performance of the Blaw-Knox gas cleaner is available and will be sent without obligation.

PERMIT TO EXERCISE FRANCHISES IN LANCASTER AND PALMDALE

Permission has been granted to the Southern California Gas Company, of Los Angeles, by the California Railroad Commission, to exercise franchise rights to be acquired from Los Angeles county for the purpose of supplying Lancaster and Palmdale with gas.

DAVID CITY, NEB., GRANTS PERMIT TO NEBRASKA NATURAL

Nebraska Natural Gas Company has been granted a 25-year natural gas franchise by the city council at David City, Neb.



Can your house-heating division

MAKE MORE MONEY?

For full profit, standardize *on the controls used in 95% of all electrically-operated jobs*

When you standardize on one line of automatic heat controls you take a healthy bite out of overhead.

Smaller stocks are carried. The service department does a first rate job every time. Wastes due to incomplete knowledge of many systems are eliminated.

And when you standardize on Minneapolis-Honeywell controls you install the units used on 95 per cent—19 out of 20—of all electrically-controlled gas house-heating plants.

The reasons for this almost unanimous choice of Minneapolis-Honeywell equipment are not hard to find.

This line is well known to your customers. Year after year national advertising has been building public confidence in the name, Minneapolis-Honeywell. This prestige is your sales advantage when you install Minneapolis-Honeywell controls.

And the continually expanding service organizations maintained by Minneapolis-Honeywell help to make your control job easy. Sales engineers and service men are ready in every part of the country to co-operate with you to the limit.

It's easy to make more profit on house heating jobs. Standardize on Minneapolis-Honeywell controls.

Minneapolis-Honeywell Regulator Co., *Executive Offices:* 401 E. 28th St., Minneapolis, Minn.

CALIFORNIA BRANCH
557 Market St., San Francisco
DISTRIBUTORS
Portland, Seattle, Salt Lake City, Denver

MINNEAPOLIS-HONEYWELL
HEAT REGULATOR

PREMIX
BURNERS
Get Results!
SUBMIT YOUR REQUIREMENTS
FOR ESTIMATE WITHOUT OBLIGATION

Tested and Proved by Competition

Ventite Inspirating Burners—7 sizes for intermediate and high pressure gas

Premix type available for low pressure gas

MAXON PREMIX BURNER CO.
INDUSTRIAL FUEL BURNING EQUIPMENT
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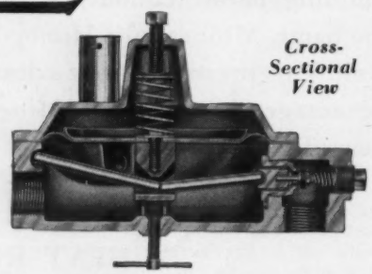
Reynolds
Gas Control Since 1892

Reynolds Little Giant Regulator

Products for all kinds of Pressure Reduction—for either artificial or natural gas.
GOVERNORS—Intermediate Pressure, Triple Outlet, Holder, Toggle Type Street.
REGULATORS—High Pressure Service, Low Pressure Service, High Pressure Line, Single and Double District Station.
VALVE—Automatic Quick Closing Anti Vacuum.

Reynolds Gas Regulator Company
Anderson, Indiana



Cross-Sectional View

"PSYCHOLOGY OF SALESMANSHIP" CLASS IS WELL ATTENDED

A large number of representatives of the New Business Department of the Gas Service Company recently attended a series of lectures on the "Psychology of Salesmanship", held in the auditorium of the Country Club Plaza office of the Kansas City Gas Company, Kansas City, Mo.

C. A. Brewer of the University of Kansas was instructor of the class, which met every other day over a two-weeks period. The average attendance of the class was 94. Representatives from the Kansas City Gas Company, the Wyandotte County Gas Company, the Henry L. Doherty Securities Department, Jackson County Light, Heat & Power Company of Independence, Missouri, and the Union Public Service Company of Merriam, made-up the enrollment of the school.

THREE NEW OFFICES OPENED BY LOUIS ALLIS CO. OF MILWAUKEE

Three new Louis Allis Company offices have been opened, at Tulsa, Okla., Los Angeles, Calif., and Pittsburgh, Pa. The company maintains headquarters at Milwaukee, Wisconsin.

The Tulsa office is located at 215-B East Archer Street, and is in charge of W. Woobank. The Los Angeles office address is 4441 Santa Fe Ave., and is under the direction of A. R. Thomas; while Pittsburgh headquarters are located at 1715 Union Bank Building, with C. O. Sargent in charge.

MEMPHIS NATURAL TO HAVE ADDED COMPRESSOR STATION UNITS

D. C. Schaffer, general superintendent of the Memphis Natural Gas Company, has announced immediate construction of additional compressor plant units at the station of the company at Guthrie, Louisiana. The capacity of the plant is to be increased by approximately 20 per cent, according to Mr. Schaffer. The Guthrie station is on the Monroe end of the company's 210-mile line extending from the Monroe fields to Memphis. Another station on this line is located at Benoit, Miss.

BEAN'S PAPER ON COMPRESSIBILITY NOW IN PAMPHLET FORM

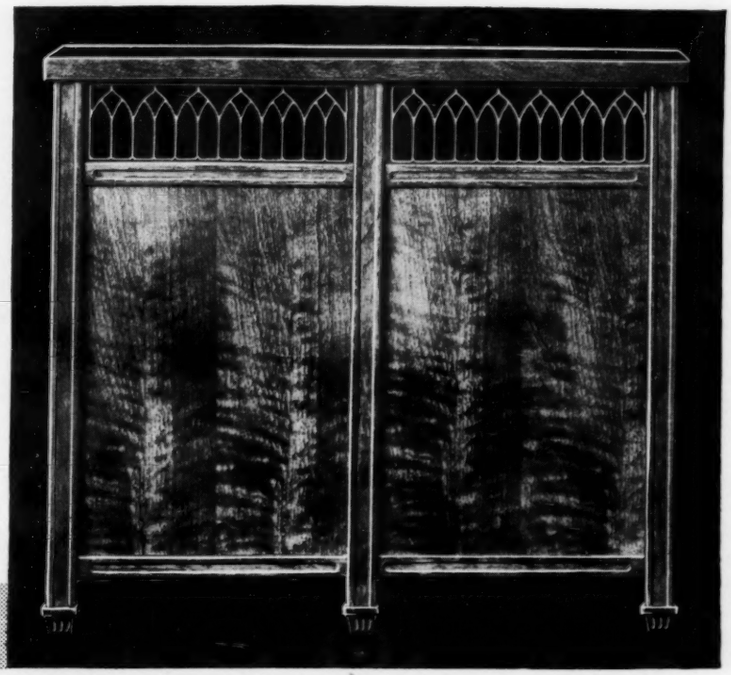
The United States Bureau of Mines has issued in bulletin form, research paper No. 170, by Howard S. Bean on "An Apparatus and Method for Determining the Compressibility of a Gas and the Correction for 'Supercompressibility.'" Copies may be obtained from the Superintendent of Documents, Washington, D. C.

ARROWSMITH HAS CONTRACT TO HEAT OFFICERS' QUARTERS

The T. G. Arrowsmith Company, San Francisco, has recently taken the contract to furnish and install the heating equipment in 75 officers' quarters in the military Presidio at Monterey. The installation consists of 171 units of floor furnaces and cabinet circulators.

CENTRAL STATES GAS UTILITIES CO. OF ILLINOIS ASKS PERMIT

Central States Gas Utilities Company of Illinois has filed an application with the Missouri state public service commission for a certificate of necessity and convenience to construct a gas distribution system in the territory near Kansas City, north and west of Raytown.



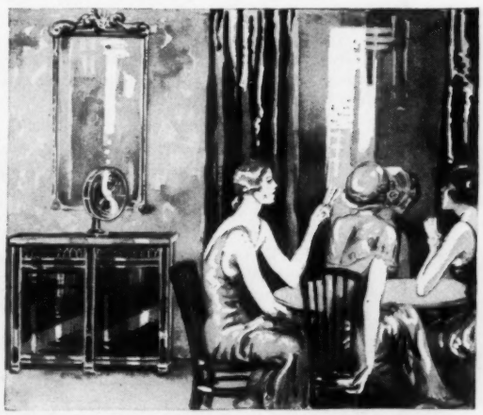
Full-grained walnut finish, obtained by photographic process, makes the new Payne Console Heater look like a fine piece of furniture!

ALL YEAR 'ROUND

●● Even during hot Summer days the Payne Console Heater serves a useful purpose!

Designed for beauty as well as comfort, the Payne Console enters into the true spirit of modern home decoration. It become an ornament . . . useful as an occasional table for book ends, flower bowl, table lamp . . . or as a stand for an electric fan for circulating cool air during warm weather!

Even with heat turned on, the top and sides of this attractive heating device remain cool always. Controls are out of sight. Vent carries unhealthful fumes out of doors. Fresh, pure, warm air circulates to every nook and corner.



No other cabinet heater offers so much beauty and practical utility combined. Write or wire now for complete sales literature and prices.

PAYNE Console HEATER

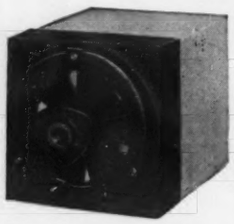
MANUFACTURED ONLY BY THE PAYNE FURNACE AND SUPPLY COMPANY, INC.
BEVERLY HILLS, CALIFORNIA

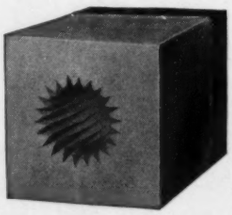
Warehouse—Buffalo, N. Y.
Jobbers in All Principal Cities
Dealers Everywhere

THERE'S A PAYNE HEAT SYSTEM FOR EVERY CLIMATE AND BUILDING

Ease of Flame Control in DFC

Atmospheric Gas Burners Enables Firemen to Do More Work





THE DFC Atmospheric Gas Burner simplifies flame control to a point where better ware is produced and labor economies are set up. Labor savings, plus proved fuel economies, have **paid for every one of the many installations** of this burner in from 2 to 6 months. This is a matter of record and makes the burner easy to sell.

Get the facts; send today for Bulletin 305.

Additional economies result from the low upkeep cost of the throat and nozzle—refractory where they meet the heat, and capable of withstanding the same thermal shocks as the apparatus itself.

With the DFC Atmospheric Gas Burner many objections to the use of gas are entirely removed.

THE DENVER FIRE CLAY COMPANY

DENVER DFC COLO. U.S.A.

BRANCHES AT SALT LAKE CITY, EL PASO, AND NEW YORK

The First Substantial Improvement in Storage Water Heaters

THE heater is finished in lustrous enamel.

300-lb. test copper-bearing Steel tank.

New Efficient Insulating Material.

Safety Pilot.

Combination Safety and drain valve.

2 sizes: 25 gal.—40 gal.

Pittsburg Monarch Superfine Automatic Storage Water Heater

Made in 2 Sizes
25 Gallons—40 Gallons

Pittsburg Water Heater Company

Offices at:

478 Sutter St.
San Francisco

2010 Jackson St.
Dallas

242 So. Western Ave.
Los Angeles

H. R. BASFORD OF SAN FRANCISCO IS NOW INCORPORATED

It is announced that H. R. Basford, who for the past 25 years has represented the Ruud Water Heater Company and for many years the Tappan Stove Company and Sprague Meter Company in northern California, has incorporated his business, taking into the company as officers several of his employees and men who have been associated with him for a long time.

The officers of the new company will be H. R. Basford, president; F. A. Cressey, Jr., vice-president; G. P. Egleston, general manager, secretary and treasurer; A. F. Rice, director; William Mixter, assistant secretary, and Miss L. M. Salin, assistant treasurer.

As already announced, the company has recently been appointed agent for the Ruud Water Heater Company for Southern California. The territory of the company now embraces all of California, Nevada, Arizona and Hawaii. The company also represents the Tappan Stove Company and Sprague Meter Company for northern California, Nevada and Hawaii, and has recently taken on the Fraser line of furnaces, circulators and floor furnaces, planning to sell the output in all of California.

C. E. VAUGHN WITH INDUSTRIAL DEPT. OF COAST COUNTIES

C. E. Vaughn has recently been appointed to a post in the industrial gas department of Coast Counties Gas and Electric Company.

He was formerly connected with the sales department of the company, and previous to that time was Pacific Coast sales representative for the Savage Washing Machine Company.

His headquarters will be made in Watsonville, and his work will be in conjunction with that of W. N. Thayer, industrial gas engineer, whose offices are at Pittsburgh, in the Northern Division of the company.

E. A. KEY COMPANY, INC. OPENS SAN FRANCISCO OFFICES

E. A. Key Company, Inc., has opened offices at 163 Second St., San Francisco, to serve the territory of Northern California, Oregon, Washington and Nevada. The office will be under the direction of C. R. Baxter, president of the corporation and one of its organizers. The company was organized in Los Angeles seven years ago.

Among the various products of the company are Key Graphite Paste, and Key-Tite Joint Compound, used in gas transmission line construction.

MANY NEBRASKA TOWNS NOW ON LIST OF NATURAL GAS USERS

The Nebraska Natural Gas Company, with headquarters at Lincoln, Nebraska, now serves natural gas in Chester, Hebron, Deshler, Davenport, Edgar, Clay Center, Kenesaw, Wood River, Shelton, Harvard, Sutton, Trumbull, Minden, Axtell, Funk, Holdredge and Gibbon in Nebraska. The Natural Gas Distributing Company handles the distribution in these various towns.

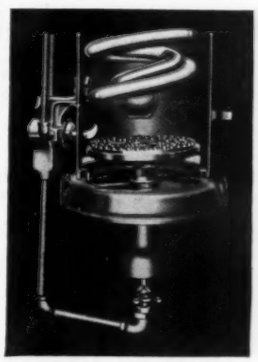
PAUL J. HEROLD NAMED TO BOARD OF APPALACHIAN GAS CORP.

Announcement is made of the election of Paul J. Herold, of Hale, Waters & Company, New York, to the directorate of the Appalachian Gas Corporation and its subsidiaries, the Texas Gas Utilities Company and the Southwestern Natural Gas Company.

DEPENDABLE · ECONOMICAL · · · ·

BECAUSE IT HAS THE FAMOUS SPENCER SNAP ACTING THERMOSTATIC DISC · ·

THE simplest of all safety pilots . . . that is the key point of Klixon Products because they have exclusive use of the famous Spencer thermostatic disc. This disc closes the main gas valve with a direct thrust if the pilot light is extinguished for any reason. There are no other moving parts. If you have never had one of these discs in your hands, we shall be glad to send you a sample, with directions as to its operation. Once you have seen it in action you will instantly realize why no other safety pilot can compare with the Klixon. The attached coupon will bring you this sample disc with a folder containing full information about the safety pilot. No obligation. Please give title showing position in your firm.



SPENCER THERMOSTAT CO

CAMBRIDGE · · · MASS

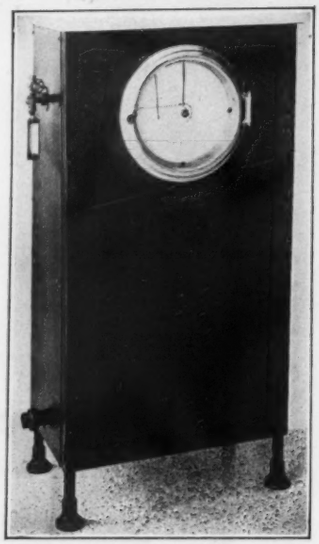
Pacific Coast Representative, B. W. MUELLER, 447 Sutter St., San Francisco, California

SPENCER THERMOSTAT CO., CAMBRIDGE, MASS.
PLEASE SEND SAMPLE SPENCER DISC TO:—

NAME ..... TITLE .....

FIRM .....

ADDRESS .....



A ROBOT

That Works for You 24 Hours Per Day

Day and night, Sundays and Holidays, rain or shine, hot or cold, this mechanical man stays on the job, gauging and recording the specific gravity of natural or artificial gas, and far more accurately than man himself could do!

Improved AC-ME Approved Gravitometer

This device is highly sensitive to all changes in specific gravity, registering them IN WRITING. It is indispensable where the specific gravity of gas is fluctuating, and particularly suitable when gas is secured from different sources. Allows for temperature and barometric changes.

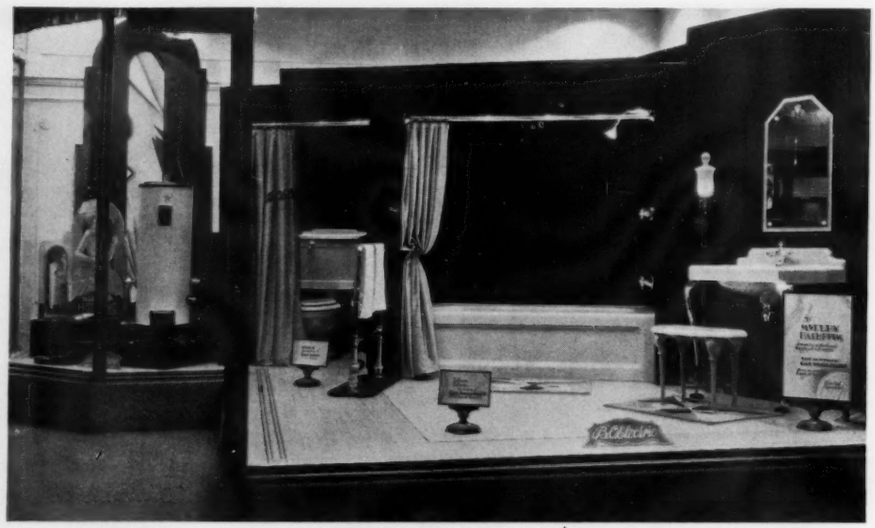
Sturdily built for field as well as inside use, occupies but little space, and requires practically no attention.

Let us tell you more about this Robot! Write for descriptive circular "W"— also Bulletin No. 14-W, featuring our complete line of scientific ACcurate-MEasuring equipment.

AC-CURATE MEASUREMENT AC-ME PRECISION INSTRUMENTS TRADE MARK REG. U.S. PAT. OFF.

The Refinery Supply Co.

621 E. 4th, Tulsa, Oklahoma
Branch: 3404 Main St., Dallas, Texas
Pacific Coast Representative: Braun Corp., 363 New High, Los Angeles - - Calif.



Window Display Features Gas-Fired Water Heater

THE British Columbia Electric Power and Gas Co., recently adopted rather an unusual method for directing attention to its automatic gas water heaters, in the form of an attractive window display, featuring a complete set of bathroom fixtures.

The display, as shown above, was staged in one of the main showroom windows of the company. Fixtures included bath, toilet, wash basin and bench, as well as a towel dryer. The wash basin, with a mirror to match, was secured to a screen of black felt, while the other fixtures were installed in alcoves covered with similar material, and ornamented with bright green curtains, which harmonized with the shading of the fixtures.

An automatic gas fired water heater was shown in one corner of the window, and a card in the foreground read as follows:

"The modern bathroom demands a plenteous supply of hot water. The automatic gas water heater gives an unlimited supply at low cost."

The display was made possible through the cooperation of a local plumbing house.

Engineering *and* Research Bldg. *for* A. O. Smith Corp.

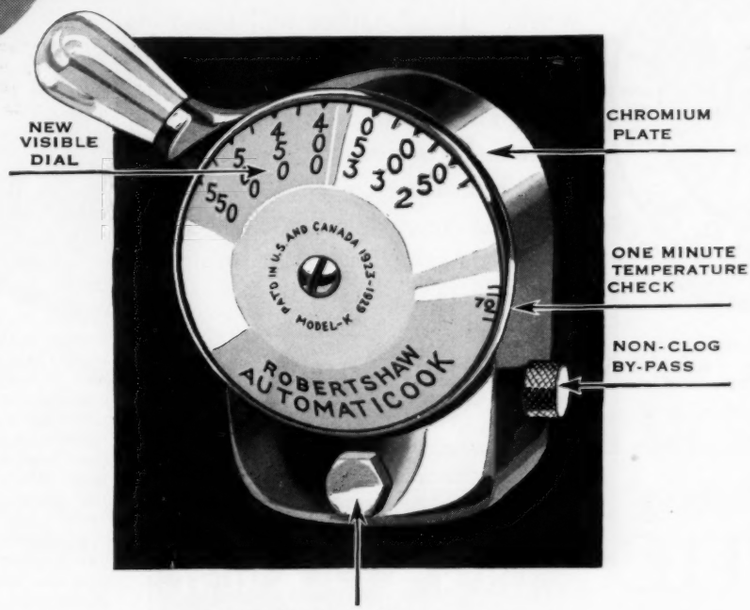
A. O. SMITH CORP. of Milwaukee, Wis., is constructing a seven-story structure to be known as the Engineering and Research Building. When completed, the building will house a corps of research engineers and scientists who will carry on work in the field of invention and discovery for the corporation.

The existing staff of engineers and scientists will be built up to 1000, and will have for its use the necessary equipment to make scientific research possible.

The new Engineering and Research Building of the A. O. Smith Corporation, at Milwaukee, Wisconsin.

5 FEATURES!

make the "K" Type Robertshaw's greatest AutomatiCook



WHEN the new gas ranges reach you, look for the brand new, greatly improved Robertshaw "K" type AutomatiCook. Examine it. You'll find in the new AutomatiCook selling arguments that will make your ranges move faster.

Five new features—smaller, neater, more compact. There's a fully visible dial. There's a handsome chromium finish. There's a fool-proof One-Minute Temperature Check. A non-clog by-pass. And only *one* bolt holds the whole AutomatiCook to the range! Temperature setting, calibrating and all working parts accessible from outside the range.

We've prepared some descriptive literature of this new AutomatiCook. Write for it now. Study it before your ranges begin to arrive .... If you'll send us the names of your employees handling, selling or installing ranges, we'll be glad to send them literature to help sell ranges faster, too ... Write—*today!*

ROBERTSHAW AutomatiCook

ROBERTSHAW THERMOSTAT COMPANY
Youngwood, Penna.

PLAY SAFE!

By Specifying and Using

"COLONIAL" BRAND

Re-Chrome Meter Leather

in your New Meters and Repair Work. This Leather will stand the Five-Minute Boiling Test.

This Trade Mark stamped on each New Zealand Lambskin is our guarantee to you that each skin has received the greatest care in its selection and tanning.

Besse, Osborn & Odell, Inc.

51 South Street, Boston **177 William St., N. Y.**

PLASTIC Fire Brick

Gladding, McBean & Co. Plastic Fire Brick is a high grade refractory in mouldable form, which is shipped ready for use in airtight metal drums.

Plastic Fire Brick can be used in all places where fire brick is used, and the demand for it is constantly increasing.

For complete information, send for pamphlet.

Gladding, McBean & Co.

SAN FRANCISCO, OAKLAND, FRESNO
LOS ANGELES, PORTLAND, SEATTLE
SPOKANE

NO-OX-ID
IRON + OX = RUST
TRADE MARK
The Original Rust Preventive

See our Exhibit at the International Petroleum Exposition —Tulsa, Okla., Oct. 4-11.

"NO-OX-ID Treated Steel is Always Steel"

DEARBORN CHEMICAL COMPANY

LOS ANGELES:
807 Mateo Street
Phone TRinity 3385

SAN FRANCISCO:
252 Spear Street
Phone Davenport 658

DEARBORN CHEMICAL COMPANY
NO-OX-ID-IZED WRAPPER
TRADE MARK
NEW YORK CHICAGO

Classified Advertising

Classified advertising five cents per word; minimum $2.00 per insertion. Situation Wanted advertisements up to 50 words will be published three consecutive issues without charge. Small professional cards 1-in. deep by 21 ems wide are $5.00 monthly on 12-time contract.

HELP WANTED—MALE

Salesman with car to sell gas burners for steam boilers, oil stills and industrial furnaces. Technical and practical training with sales experience necessary. Salary and mileage. Location, San Francisco. State age, salary and full details in first letter. Address Box No. E-76, *Western Gas,* 124 West Fourth Street, Los Angeles, Calif.

SITUATIONS WANTED—MALE

Civil engineer and draftsman desires connection with oil or gas company. Applicant is 32 years of age, and is married. He has had 13 years experience in oil and gas field engineering, plane table surveys in connection with mapping geological structures, and experience in gas transmission and distribution line work. References. Address Box B-99, *Western Gas,* 124 West Fourth Street, Los Angeles, Calif.

Salesman having 20 years experience in gas appliance selling, would like to represent manufacturer of such appliances in the Southwest. Address Box B-101, *Western Gas,* 124 West Fourth Street, Los Angeles, California.

JOHN ZINK CO. OFFERS NEW GAS BURNER FOR LOCOMOTIVES

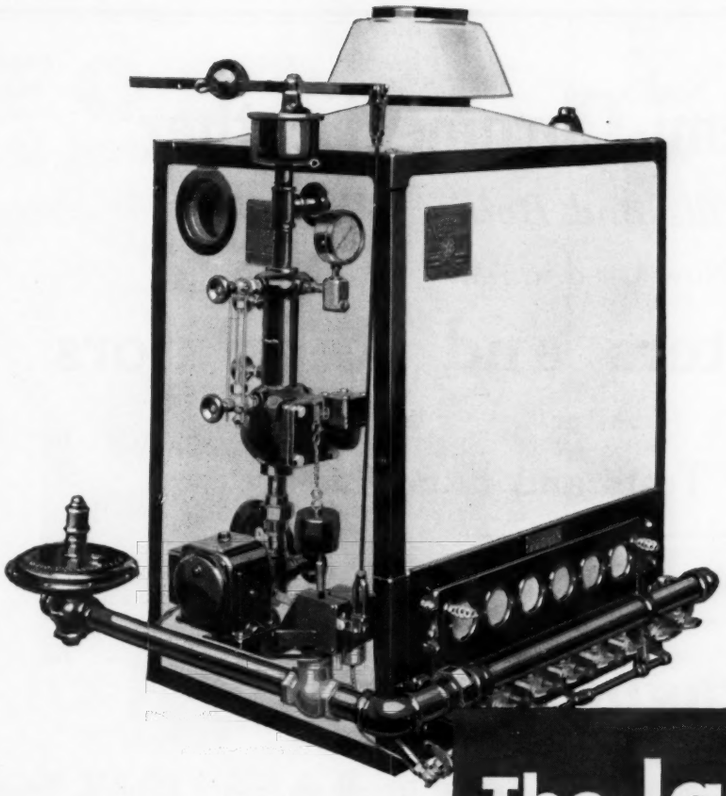
John Zink Company, manufacturer of gas burners, with headquarters in the Oklahoma Natural Gas Building at Tulsa, has introduced on the market a new gas burner for use in the firing of locomotive engines in the roundhouse preparatory to taking them out for a run.

The burner fits into a 12-inch by 14-inch door, weighs 46 pounds, and burns with a short flame 12,000 cubic feet of gas per hour where gas is available at 15 pounds gage pressure.

On a recent test approximately 8,000 cubic feet of gas were required to steam a large freight engine from a cold start to 100 pounds of steam in 40 minutes time.

SAN ANTONIO PUBLIC SERVICE TO SPEND $495,481 IN 1930

A total of $495,481 is the figure set forth in the budget of the Gas Department of the San Antonio Public Service Company for expenditures during 1930. Approximately $318,000 of this amount will go for mains, services, meters and regulators, with approximately $55,000 being expended for feeder-mains and tie-in lines. The remaining amount will be spent for replacements and necessary purchases of equipment.



The last word in AUTOMATIC HEATING

IDEAL GAS BOILERS

Automatic house heating has come to stay. And heating that is 100% automatic is possible for every building with Ideal Gas Boilers. This kind of heating has become popular with home owners, and better gas companies are finding it easier to sell Ideal Gas Boilers and thereby build up a double profit — from the appliance sale and from the permanent increase in their heating load.

● All of the prestige of American Radiator Company is back of every Ideal Gas Boiler — a fact that appeals instantly to any prospect.

manufactured by
AMERICAN RADIATOR COMPANY
division of
AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

distributed by
AMERICAN GAS PRODUCTION CORPORATION
Chrysler Building, New York

Sprague Semi-Chrome Leather

Resists Acids and Boiling Water

Now Used in All

Sprague Meters and Regulators

After

Five Years' Tests and Experiments

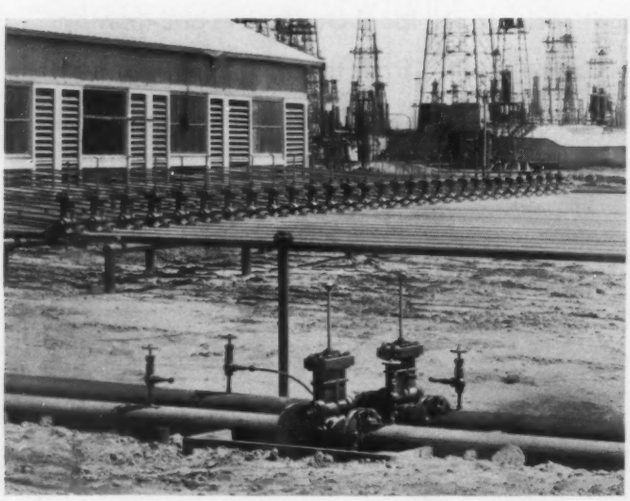
May we send you samples and data?

The Sprague Meter Co.

BRIDGEPORT, CONN.

Los Angeles, Calif. San Francisco, Calif. Newark, Ohio Davenport, Iowa Houston, Texas

Greatest Metering ACCURACY & ECONOMY



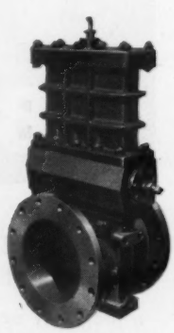
ROBINSON Orifice Fittings are economical to install and operate. They occupy no more space than an ordinary gate valve and an ordinary pressure gauge. Can be mounted in almost any position. Practically no gas or fluid loss and no hazard due to leakage. Provide a big saving in materials and time. Eliminate the necessity for a majority of valves, tees, ells, couplings, flanges, pipes, etc., that run into money.

Robinson Orifice Fittings cut the cost of time and labor to a minimum. *One man* can haul the complete Robinson "set-up" in a small car and can install it in a short time. Bigger savings as the size of the "set-up" increases.

Robinson Orifice Fittings are made in sizes ranging from 2″ to 20″ to function at working pressures of from 100 to 500 pounds. Protected by U. S. Patent No. 1,569,305.

MORE accurate metering results from the use of the Robinson Orifice Fitting. The orifice is always centered in the line. The plate is easily changed—eliminating any delay in adapting the meter to a changed flow condition. Frequent inspection and micrometer checking of the orifice diameter are simplified. Line contents must pass through the orifice and are correctly measured. No by-pass to stick open and leak—causing inaccurate metering.

FIFTY Robinson Orifice Fittings are in use at a large Re-Pressuring Plant at Santa Fe Springs. Illustration shows 32 of the total. PERFORMANCE put them there! Ask for latest Catalog.



Nearly 13,500 Robinsons in use today

Robinson Orifice Fitting Company

1435 Santa Fe Avenue Los Angeles, California, U. S. A.

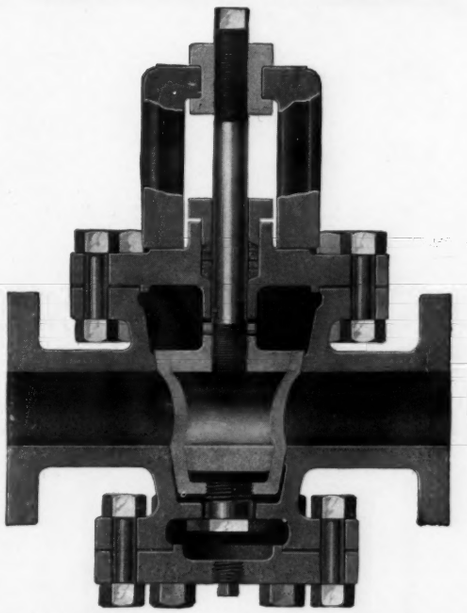
Distributors:

The Foxboro Company, Tulsa, Oklahoma; Dallas and Houston, Texas
Westcott & Greis, Inc., Tulsa, Oklahoma; Dallas and Houston, Texas

English Distributors:

Walker, Crosweller & Company, 54-58 Queen Elizabeth St., London, S. E. No. 1

FOSTER



PLUG VALVES

"Guaranteed for Ten Years"

1. Adjustable.
2. Non-Lubricated.
3. Removable Seat and Plug.
4. 100% Opening Through Valve.
5. Stainless Steel Plug.
6. No Friction Loss.
7. No Eddy Currents.
8. Cannot "Stick" or "Freeze."
9. Kerosene Tested.
10. Re-Packed Under Pressure.
11. Clean-Out Plug on Bottom.
12. Seats Removed Without Taking Valve From Line.
13. Sizes 2" to 6" Iron or Steel For All Pressures.

Exclusive Distributors

DUCOMMUN CORPORATION

Los Angeles San Francisco

LEAHY

Multi-jet Units

Insure
Efficiency
Capacity
Satisfaction

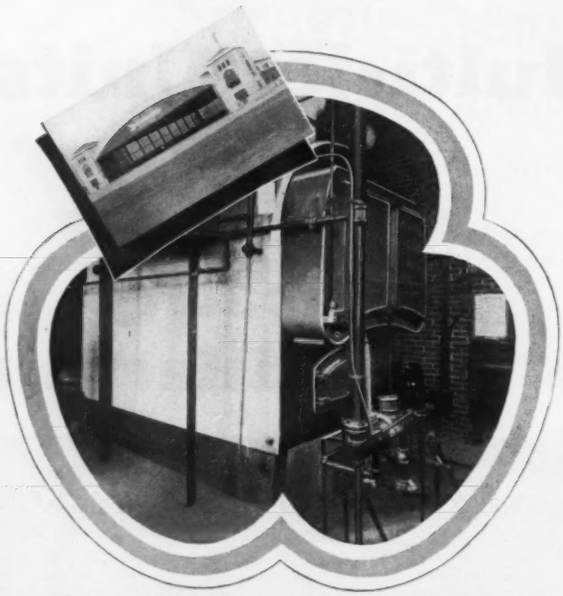
The Leahy Multi-jet Unit combines exclusive features that insure maximum efficiency . . . Designed for front, rear or vertical firing . . . Uses either gas or oil fuel . . . Gas burners last longer due to protection of all exposed parts by refractories . . . Write for bulletin 19-E.

Complete information concerning the efficient and economical method of using gas and oil fuel under oil field burners is contained in Bulletin 18-A and 20-A, sent upon request.

COMBUSTION EQUIPMENT
LEAHY
LOS ANGELES CAL. U.S.A.

LEAHY MANUFACTURING CO.
Established 1902
1804-1812 East Eighth St. Los Angeles, California

WEBSTER Radiant Gas Burners



Webster Heats This Hangar from 30 to 70 degrees in Twenty Minutes!

The T. A. T. Hangar, at Port Columbus, Ohio, is heated with Webster Radiant Gas Burners that are capable, in zero weather, of raising the inside temperature from 30° to 70° in twenty minutes! . . . . . all this in a building whose total equivalent direct radiation is 24,000 sq. ft.!

As smoke must be eliminated from air fields —being a menace to the lives of both pilots and passengers—gas was naturally chosen as the ideal fuel and Webster Radiant Gas Burners as the best of their type to do the heating job.

Again, we are given ample proof of the adaptability of Webster Radiant Gas Burners to any need . . . whether you have an aircraft hangar job or one equally difficult, you will find Webster engineers ready to cooperate with you to make every installation live up to what is promised.

Are you fully acquainted with Webster Radiant Gas Burners? If not, have us send you full information at once—no obligation.

[*Complete description of the above is given in the April 26th issue of Gas Age Record*]

The Webster Engineering Co.
TULSA - OKLA.
Boiler Burner Division of
The Surface Combustion Co.
Subsidiary of Henry L. Doherty & Co
2375 DORR STREET TOLEDO OHIO
Branch Offices in All Principal Cities
Member of Industrial Furnace Manufacturers Association

Wedgewood

KPO
KGO
KFI

KGW
KOMO
KHQ
KSL

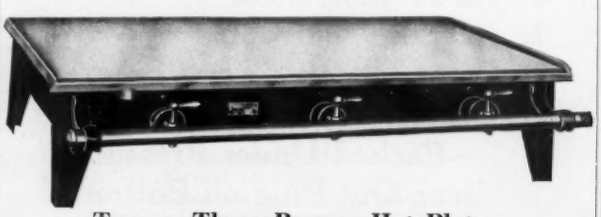
Cooking School of the Air
Every Tuesday A. M.
11:10 o'clock

Hundreds of letters tell us how much these programs are appreciated and that the cooking recipes are priceless.

This Short Order Wedgewood Is In Great Demand

May be equipped with single key plate griddle, or double griddle. A six-burner Skeleton Restaurant Range on heavy bar-iron legs. Cooking-Top 21″x33″.

A money maker for cafe or hot dog stand owners.

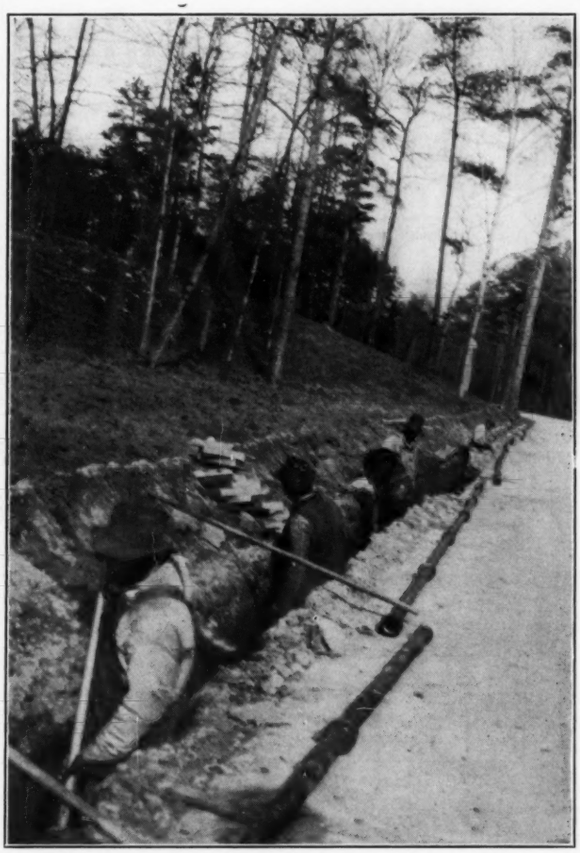


Two or Three Burner Hot Plates

You see them in restaurant and cafe windows everywhere, turning out delicious hot cakes or fried orders. Known as a Wedgewood product they sell readily. With ground and polished tops and grease groove along front. Heavy stamped steel body and legs.

Two or three burner size.

James Graham Manufacturing Company
Largest Stove Manufacturers in the West
Domestic and Restaurant Gas Ranges
San Francsico Newark, Calif. Los Angeles
Since 1882



No Coddling Here!

Here's a 2-inch, medium-pressure gas main going in where not a minute or a penny need ever be spent for coating, wrapping, or coddling.

For it's CAST IRON 2-inch pipe—McWANE-PACIFIC Pipe with McWANE screw joints (without couplings).

This McWane-Pacific Pipe will last by the century; the joints can't leak, and laying its 18-foot laying lengths is as swift and simple as for any pipe made.

Permanence at low cost sums up McWane-Pacific cast iron gas pipe. With threaded, plain end, B. & S., or FLEXPAN joints, for gas pressures to 100 lbs.

Sizes: 1¼ thru 12 inches. At least ***Investigate.***

Pacific States Cast Iron Pipe Co.

San Francisco - Los Angeles - Portland - Denver

McWane Cast Iron Pipe Co.

Birmingham - Philadelphia - Chicago - Dallas

...l electrotype of this illustration may be had for use in your own advertising of JANITROL. It is appropriate for newspaper and direct mail publicity. Copy suggestions will be furnished if desired.

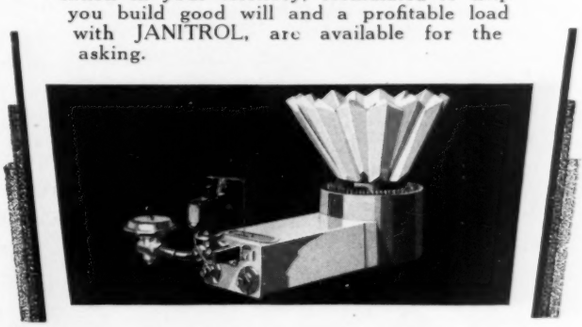
Decide NOW—Get JANITROL Prospects to say "Yes" this Summer—!

Grab your phone and start calling—you will find prospects—plenty of them—willing to talk about winter heating problems right now—even though these summer days are sweltering. . . .

. . . Summer is a good time to sell JANITROL. Fuel Bins are empty. Basements are in an orderly condition. Owners are open-minded.

Many Gas Companies are installing JANITROL during the summer months through special offers, such as (1) small down payments; (2) interesting discounts off advertised prices for July and August installations; (3) furnace thoroughly cleaned free of charge with every JANITROL installation; and (4) an offer of another load building appliance, such as radiant fire, free with each JANITROL installation.

There are many other ways to sell JANITROL. Merchandising plans, ready for special application in your territory, formulated to help you build good will and a profitable load with JANITROL, are available for the asking.



The Surface Combustion Co.

INCORPORATED

Subsidiary of Henry L. Doherty & Co.

2375 DORR STREET, TOLEDO, OHIO

Branch Offices in All Principal Cities

Mantle Recuperator Division — Webster Engineering Co.

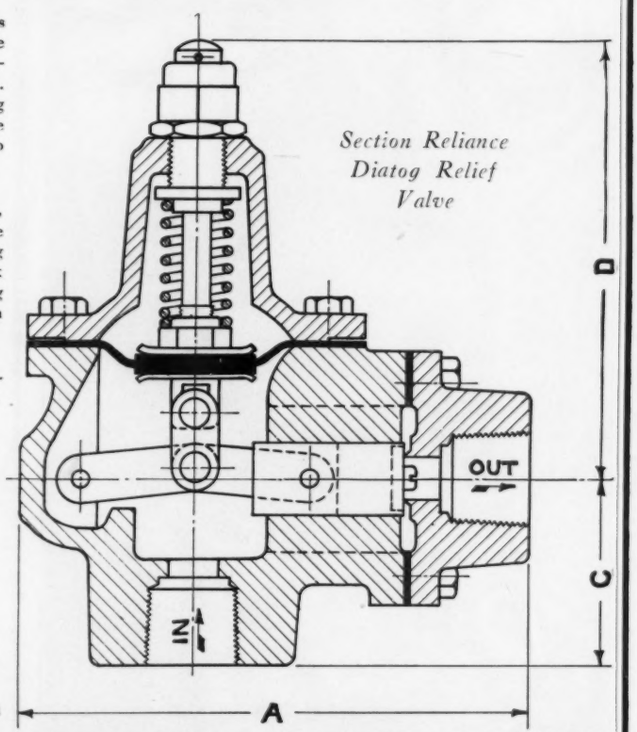
Member of Industrial Furnace Manufacturers Association

Reliance Diatog Safety Relief Valve

THIS valve is used extensively in safeguarding consumer's service taken from high-pressure transmission lines. The installation is usually made between a high pressure reducing regulator and the ordinary house or service type regulator. This eliminates the danger of extreme high pressures being thrown against the house-type regulator, resulting in damage to the house regulator or subjecting meter and house piping to dangerously high pressures.

The action of this relief valve is very simple and positive, having a diaphragm actuating the valve through our toggle mechanism. The diaphragm spring is correspondingly strong and flexible, allowing sensitive adjustment and insuring quick shut-off after relief valve has blown. The range of popping pressures can be controlled from one pound to 125 pounds with the use of various sizes of springs.

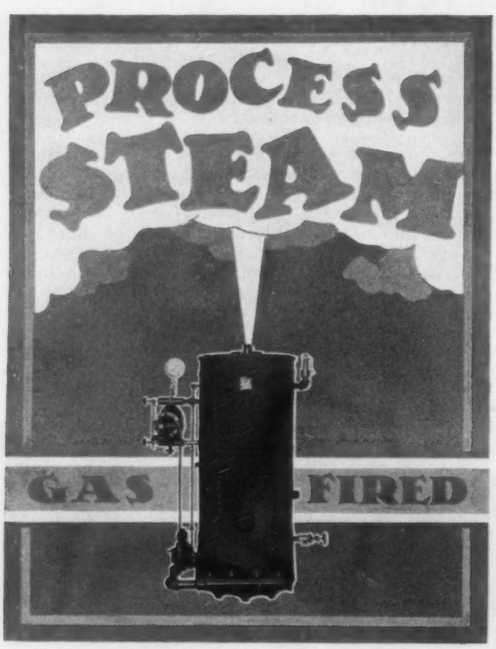
These valves are made only in ¾" and 1" sizes. When ordering, please specify at what pressures you wish the valve to pop



Section Reliance Diatog Relief Valve

Reliance Manufacturing Company

1000 Meridian Avenue **Alhambra, California**



Write for Several Copies . . .

—an aid in selling *Gas steam Boilers that is Effective!*

This Folder, *"Process Steam—Gas-Fired,"* really helps build gas and gas boiler sales.

It is not just "another Broadside" that screams the merits of a product. It tells, simply and thoroughly, the advantages of gas-fired boilers for process steam generation. It shows how Kane boilers meet *every* process steam need—and this includes the need of your prospect, real or potential.

—And it illustrates, by views of actual installations, the compactness, cleanliness, ease of control, and automatic operation of gas-fired boilers. It describes, more convincingly than sales talk, how Kane gas-fired boilers solve process steam problems, economically and efficiently. We shall be glad to send you as many copies as you require, without charge, of course.

New York—9 Park Place
Boston—100 Arlington St.
Chicago—363 W. Erie St.

MEARS-KANE-OFELDT Inc.
1903-1915 EAST HAGERT ST., PHILADELPHIA

Buffalo—Waldridge Bldg.
St. Louis—2010 Locust Blvd.
Birmingham—Am. Trust Bldg.

Makers of Automatic Gas Boilers for over a Quarter Century

Please Your Customers with a . . . . . .
GAS STOVE

That gives ONE-HALF MORE gas cooking surface than any other stove of the same style.

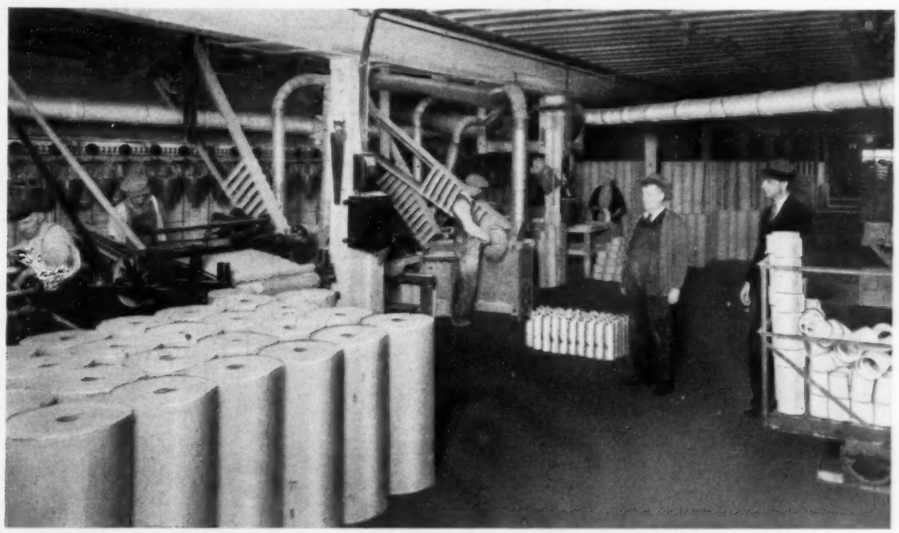
SPARK
EXTENSION-TOP

This extra gas cooking space is made possible by a **Patented Auxiliary Gas Burner** running the full length of the firebox directly under the cooking top . . . making every inch available for cooking with only two burners.

MANUFACTURED BY
Hammer-Bray Co.
Oakland California

Los Angeles, 7000 Avalon Boulevard
San Francisco 180 New Montgomery
Portland, 330 Union Avenue No.
Seattle, 1016 1st Avenue South

STRONG
ANTI-CORROSIVE
FIRE PROOF
EFFICIENT



Partial View of Our Newly Equipped Vitex Factory

VITEX

This Semi-Vitrified Gas Vent and Flue Pipe is Manufactured in San Francisco for Use Throughout the United States by
PLANT RUBBER & ASBESTOS WORKS
537 BRANNON STREET SAN FRANCISCO

DIRECTORY

Byllesby Engineering and Management Corporation

231 S. La Salle Street
CHICAGO

New York Pittsburgh San Francisco

J. B. GILL CORPORATION
NATURAL GAS ENGINEERS
COMPRESSOR PLANT DESIGN AND CONSTRUCTION
P. O. BOX 669 LONG BEACH, CALIFORNIA

REID AND BARTLETT
CONSULTING NATURAL GAS ENGINEERS
ATHLETIC CLUB BUILDING, DALLAS

SMITH-EMERY CO.
Chemists—Engineers
Established 1910
Analyses and tests. Represent Pittsburgh Testing Laboratory for inspection at Eastern foundries, mills and shops.
Offices & Laboratories
920 Santee St. Los Angeles
651 Howard St. San Francisco

If you would keep in touch with the Gas Industry developments in the West, send a check for $2.00 to

WESTERN GAS
124 West Fourth Street, Los Angeles

Name.....

Company.....

Position Occupied.....

Street Address.....

City and State.....

Subscription Rates: 1 Year $2.00; 3 years $5.00;
Foreign $3.00 per year

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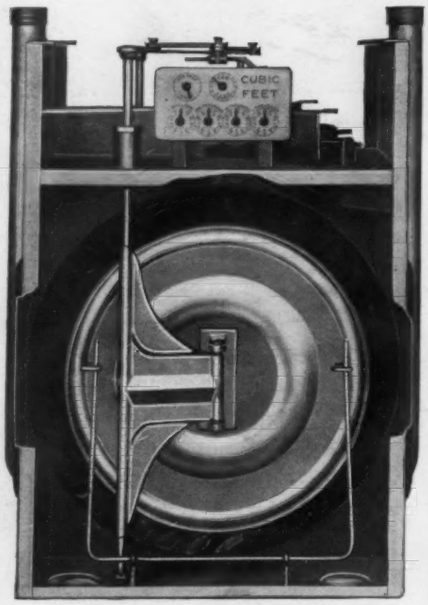

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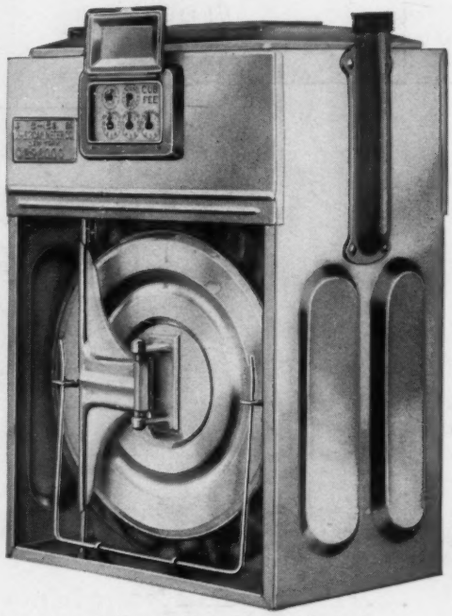

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